
United States
16
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.

(IN TWO VOLUMES.)

NORTHPORT SMELTING AND REFINING
COMPANY, a Corporation,

Appellant,

vs.

LONE PINE-SURPRISE CONSOLIDATED
MINES COMPANY, a Corporation,

Appellee.

VOLUME I.

(Pages 1 to 384, Inclusive.)

Upon Appeal from the United States District Court
for the Eastern District of Washington,
Northern Division.

FILED

JUL - 2 1921

F. D. MONCKTON,
CLERK

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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In the District Court of the United States for the
Eastern District of Washington, Northern
Division.

No. 3255.

NORTHPORT SMELTING & REFINING COM-
PANY, a Corporation,
Plaintiff,

vs.

THE LONE PINE-SURPRISE CONSOLI-
DATED MINES COMPANY, a Corporation,
Defendant.

Names and Addresses of Solicitors of Record.

JOHN P. GRAY, Residence, Coeur d'Alene, Idaho,
JOHN H. WOURMS, Residence, Wallace,
Idaho, Attorneys for Plaintiff.

FRED S. DUGGAN, 811-12 Paulson Bldg.,
Spokane, Washington, WM. E. COLBY, San
Francisco, California.

Attorneys for Defendant. [2*]

In the United States District Court, Eastern District
of Washington, Northern Division.

IN EQUITY —No. 3255.

NORTHPORT SMELTING & REFINING COM-
PANY, a Corporation,
Plaintiff,

vs.

LONE PINE-SURPRISE CONSOLIDATED
MINES COMPANY, a Corporation,
Defendant.

*Page-number appearing at foot of page of original certified Transcript
of Record.

Bill of Complaint.

Comes now the Northport Smelting & Refining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Idaho, as plaintiff, and brings this bill of complaint against the Lone Pine-Surprise Consolidated Mines Company, a corporation, duly organized and existing under and by virtue of the laws of the State of Washington, and for cause of suit alleges:

I.

That the plaintiff, Northport Smelting & Refining Company, ever since the year 1901 has been, and now is, a corporation duly organized and existing under and by virtue of the laws of the State of Idaho, and now is, and during all of the time, and since the year 1901, has been a citizen and resident of Idaho, and has complied with the laws of the State of Washington authorizing foreign corporations to do business in said state, and now and ever since the year 1901 has been doing business within the State of Washington.

II.

That the defendant, Lone Pine-Surprise Consolidated Mines Company, is now, and for many years last past has been a corporation duly organized and existing under and by virtue of the laws of the State of Washington, and now is and for many years last past has been a resident of the said State of Washington. [3]

III.

That the jurisdiction of the United States District

Court for the Eastern District of Washington, Northern Division, over this suit is invoked and depends upon the following grounds, to wit:

(1) Upon the ground that the construction and application of sections 2322, 2324, 2325 and 2332 of the Revised Statutes of the United States if involved, and the amount in controversy exceeds in value the sum of Three Thousand Dollars (\$3,000.00), exclusive of interest and costs, all of which will appear from the facts herein set forth.

(2) Upon the ground that plaintiff is a citizen and resident of the State of Idaho, and the defendant is a citizen and resident of the State of Washington, as appears from the first and second paragraphs of this bill of complaint; that the suit involves a claim of title to real property in the Eastern District of Washington, Northern Division, and that the amount in controversy in this suit exceeds in value, exclusive of interest and costs, the sum of Three Thousand Dollars (\$3,000.00).

IV.

That on or about the 28th day of February, 1896, certain predecessors in interest of the plaintiff, Northport Smelting & Refining Company, to wit: T. Ryan, Phillip Creasor and Charles Robins, all then citizens of the United States discovered a vein or lode containing gold and silver and other valuable minerals and metals, upon vacant and unoccupied public land within what was then Stevens County, but afterwards became a part of Ferry County, State of Washington, and within the limits of the claim hereinafter described as the Lone Pine Quartz Lode Mining Claim.

V.

That the said named persons on said date located a claim upon such vein or lode and named it the Lone Pine Quartz Lode Mining Claim; that they posted a notice upon said claim at the point of [4] discovery, which notice contained the name of the claims, the names of the locators and the date of location, the number of lineal feet claimed in length along the course of the vein each way from the point of discovery and the width claimed on each side of the center of the vein.

VI.

That the said locators immediately thereafter sunk a discovery shaft upon the lode and disclosed a vein of quartz and ore with one well-defined wall.

VII.

That said locators also immediately after posting said notice heretofore referred to distinctly marked the location on the ground so that its boundaries could be readily traced, and within thirty (30) days after making the discovery aforesaid, filed in the office of the County Recorder in the county in which the claim was located, a location notice in writing, a copy of which is hereto attached, marked Exhibit "A" and made a part of this bill of complaint.

VIII.

That thereafter the said discoverers and locators and their successors in interest held, worked, possessed and actually occupied the said Lone Pine Quartz Lode Mining Claim continuously from the date of said discovery for more than five (5) years, and during all of said time were in open, notorious, exclusive and uninterrupted possession thereof.

IX.

That said Lone Pine Quartz Lode Mining Claim is known as Lot No. 363 and is described as follows:

Beginning at Corner No. 1 of the Lone Pine Lode claim from which the southwest corner of Section thirty-six (36) in township thirty-seven (37) north, range thirty-two (32) E., W. M., bears south $58^{\circ} 27' 06''$ east 6463.65 feet distant, and discovery cut bears north $51'$ west 670.8 feet distant; thence first magnetic variation [5] 23° east, north $81^{\circ} 23'$ east 289.5 feet intersect line 3-4 of Survey No. 365 the Black Tail Lode Claim, 585.9 feet to Corner No. 2; thence second course magnetic variation $21^{\circ} 45'$ east, north $25^{\circ} 55'$ west 1455.7 feet to Corner No. 3; thence third course magnetic variation 22° east, south $81^{\circ} 23'$ west 626 feet to Corner No. 4; thence fourth course magnetic variation $22^{\circ} 10'$ east, south $27^{\circ} 24' 39''$ east 1399.12 feet intersect line 3-4 of said Survey No. 365, 1468.12 feet to Corner No. 1 the place of beginning, expressly excepting and excluding however, all that portion of the ground embraced in said mining claim called the Black Tail Lode, Mineral Survey No. 365. Said Lone Pine Claim is situated in Eureka Mining District, Ferry County, State of Washington.

X.

That during the year 1897 the then owners of the Lone Pine Lode Mining Claim filed in the United States Land Office at Spokane, Washington, their application for a patent for the said Lone Pine Lode Mining Claim as above described and in their said application for patent recited the facts with refer-

ence to the discovery and location of the said claim as heretofore set forth, and filed in said land office a copy of the location notice heretofore referred to.

XI.

That the officers of the United States Land Office accepted said proof of discovery and location and said notice of location and on February 8, 1898, payment for said land was made by claimants to the United States and entry of said claim was allowed upon the proof aforesaid, and receiver's final receipt was issued, and subsequently, to wit, on the 2d day of March, 1899, the Commissioner of the General Land Office approved the acts of said officers of the United States land office and issued a United States patent to said owners of said Lone Pine Lode Mining Claim.

XII.

That subsequently, to wit, on the 19th day of July, A. D. [6] 1916, by mesne conveyances from the said original locators of the said Lone Pine Lode Mining Claim, the Northport Smelting & Refining Company, the plaintiff herein became the owner of said Lone Pine Lode Mining Claim; and that said Northport Smelting & Refining Company ever since has been and now is the owner of, in possession of and entitled to the possession of the said Lone Pine Lode Mining Claim, and all veins, lodes or ledges having their top or apices therein, throughout their entire depth between the end lines of said claim extended in their own direction.

XIII.

That the defendant, the Lone Pine-Surprise Con-

solidated Mines Company, is the owner of the Last Chance Lode Mining Claim, which adjoins the said Lone Pine Lode Mining Claim on its easterly side and that the relative situation of said Lone Pine and Last Chance Lode claims is correctly shown upon the map attached hereto marked Exhibit "C"; that the Last Chance Lode Mining Claim is described as follows, to wit:

Beginning for a description of the Last Chance Lode Claim at Corner No. 1 whence the southwest corner of Section thirty-six (36) in township thirty-seven (37) north, range thirty-two (32) E., W. M. bears south $58^{\circ} 53' 44''$ east 5496.63 feet distant, and discovery cut bears north $33^{\circ} 50'$ west 200.2 feet distant; thence first course magnetic variation $23^{\circ} 10'$ east, north $4^{\circ} 34' 19''$ east 200.1 feet intersect line 1-2 of Survey No. 374, the Micawber lode claim at south $77^{\circ} 58'$ east 0.2 of a foot from Corner No. 2 1379.23 feet to Corner No. 2; thence second course magnetic variation 23° east, north $62^{\circ} 19'$ west 150.31 intersect line 2-3 of said Survey No. 374 at north $54'$ west 1442.71 feet from Corner No. 2 665 feet to Corner No. 3; thence third course magnetic variation $22^{\circ} 45'$ east, south $11^{\circ} 13'$ E. 907.64 feet intersect line 2-3 of the Lone Pine Lode claim 1630.2 feet to Corner No. 4; thence fourth course magnetic variation $24^{\circ} 45'$ east, south $62^{\circ} 19'$ east 182.30 feet to Corner [7] No. 1, the place of beginning, excluding from these presents all that portion of the ground hereinbefore described embraced in said Micawber lode claim survey No. 374.

XIV.

That some time subsequent to February 29, 1896, and prior to March 13, 1896, the predecessors in interest of the defendant, Lone Pine-Surprise Consolidated Mines Company located the Last Chance Lode Mining Claim and filed in the office of the County Recorder in the county in which said claim was situated a location notice in writing, a copy of which is attached hereto and marked Exhibit "B."

XV.

That thereafter and prior to February 8, 1898 the then owners of the said Last Chance Lode Claim filed in the United States Land Office at Spokane, Washington, an application for a patent for said Last Chance Lode Mining Claim based on the location notice aforesaid, and on the 8th day of February, 1898, said applicant paid for said claim and mineral entry was allowed and receiver's final receipt issued for said claim; and subsequently, and, to wit, on the 2d day of March, 1899, the United States issued its patent for said claim to the owners thereof.

XVI.

That within said Lone Pine Lode there is a vein or lode of rock in place bearing gold and silver and other valuable minerals and metals, which said vein or lode is commonly known as and called the Black Tail Lode, the top or apex of said Black Tail Lode crosses the southerly end-line of said Lone Lode Claim, which line connects Corners No. one and two of said claim and then proceeds in a northerly direction and crosses the easterly side-line of the Lone

Pine at a point about 618 feet north from the southeast corner of said Lone Pine Lode Mining Claim and continues until it crosses the west boundary of said Last Chance Lode Mining Claim. [8]

XVII.

That the downward course of said vein is easterly on its downward course between plains drawn downward vertically and parallel to the end-lines of said Lone Pine extended easterly in their own direction; said vein passes under and extends indefinitely easterly beyond the vertical plain drawn downward through the west boundary line of said Last Chance Lode Mining Claim; said vein on its downward course passes underneath the surfact of the said Last Chance Lode Mining Claim.

XVIII.

Plaintiff avers that since the 19th day of July, A. D. 1916, said Northport Smelting & Refining Company has been the owner of and now is the sole owner in fee, in possession of and entitled to the possession of the said Lone Pine Lode Mining Claim and of said Black Tail vein throughout its entire depth between plains drawn downward vertically and parallel to the end-lines of said Lone Pine Lode Mining Claim, said end-lines extended easterly in their own direction.

XIX.

Plaintiff further avers that defendant claims an estate or interest adverse to plaintiff's in and to said Lone Pine Mining Claim and in and to the vein or lode heretofore referred to as the Black Tail Lode, and in and to that part of said Black Tail which lies

between the vertical plains drawn downward through the end-lines of said Lone Pine Lode mining claim and said end-lines extended easterly in their own direction, the exact nature of which claims are unknown to the plaintiff.

XX.

That plaintiff avers that said claims of the defendant and each of them are false and groundless and are a cloud on said plaintiff's title; that said claims are without any right whatever, and that said defendant has no right, title or interest whatever in or to said Lone Pine Lode Mining Claim or any in or to said Black Tail lode, [9] or any part thereof, between the said plains hereinbefore described.

XXI.

Plaintiff further avers that said Lone Pine Lode Mining Claim as hereinbefore described is of great value, to wit, of more than One Hundred Thousand (\$100,000.00) Dollars, and that the value of said part of the Black Tail lode hereinbefore described, lying between the end plains of the Lone Pine lode claim hereinbefore referred to, exceeds in value the sum of One Hundred Thousand (\$100,000.00) Dollars, and that portion of said lode to which defendant wrongfully asserts title and claim as hereinbefore set forth exceeds in value the sum of One Hundred Thousand (\$100,000.00) Dollars, exclusive of interest and costs. That plaintiff's interest in said claim and lode exceeds in value the sum of Three Thousand (\$3,000.00) Dollars, exclusive of interest and costs.

XXII.

Plaintiff further avers that some time subsequent to the 19th day of July, A. D. 1916, and while the Northport Smelting & Refining Company was the sole owner of said Lone Pine claim and the said Black Tail vein, the said defendant Lone Pine-Surprise Consolidated Mines Company did by means of secret underground workings in its exclusive possession and control wilfully and knowingly penetrate into and upon those parts of said Black Tail lode which lie between the plains hereinbefore described, and that the said underground workings of said defendant cut and intersected said Black Tail vein which contained large and valuable ore bodies of gold and silver and other valuable minerals, and said defendant wilfully and knowingly extracted and removed therefrom large amounts of said ore and minerals belonging to plaintiff, and appropriated the same to its own use, and sold the same; that the exact amount of ore so removed is unknown to plaintiff but plaintiff alleges the said amount exceeds in value the sum of One Hundred Thousand (\$100,000.00) Dollars; that plaintiff has no means of ascertaining the amount and value of said ores excepting [10] by a discovery and an accounting.

XXIII.

That defendant threatens to and will unless restrained by an order of this Court extend its present workings upon said Black Tail vein and extract and remove from said lode, the property of the plaintiff, Northport Smelting & Refining Company and convert to its own use the entire value thereof to the

irreparable damage to plaintiff herein.

WHEREFORE, plaintiff prays:

1. That defendant be required to answer this complaint but not under oath, plaintiff expressly waiving the oath of defendant to the answer.

2. That defendant be required to set forth the nature of its claim in and to said portion of the vein hereinbefore described and in and to the said Lone Pine Claim that all adverse claims of the defendant may be determined by a decree of this Court; that by said decree it be declared and adjudged that said defendant has no estate or interest whatsoever in or to said Lone Pine lode claim or in or to said any portion of the said Black Tail lode or vein as hereinbefore described; that by said decree it be declared and adjudged that the title of plaintiff thereto is good and valid and the said defendant be enjoined and restrained from asserting any claims whatsoever in or to said Lone Pine Mining Claim or in or to said Black Tail lode between the plains hereinbefore described adverse to the plaintiff.

3. That said defendant, its agents, servants and employees be restrained from further penetrating in or upon said Black Tail vein or lode between said plains during the pendency of this action, and from extracting or removing from said vein any ore, earth or rock.

4. That by said final decree said defendant, its servants agents and employees be perpetually enjoined from entering upon said [11] Lone Pine Lode Mining Claim or the said Black Tail Lode be-

tween the plains hereinbefore described, or from working or mining thereon, or making or continuing in cutting, opening or excavating on or in said vein or lode, or mining ground, or any part thereof, and from removing from said mining ground or any part thereof any rock, ore or mineral substances whatever.

5. That defendant be required to account for all ores heretofore extracted from the said premises hereinbefore described and that plaintiff have judgment and decree for the value of said ore so wrongfully extracted and removed.

6. Plaintiff prays for such other and further relief as shall be meet and agreeable to equity and for costs of suit.

JOHN P. GRAY,

Residence and Postoffice Address: Coeur d'Alene,
Idaho.

JOHN H. WOURMS,

Residence and Postoffice Address: Wallace, Idaho,
Solicitors and Counsel for Plaintiff.

State of Idaho,
County of Shoshone,—ss.

Jerome J. Day, being first duly sworn, on oath deposes and says:

That he is an officer, to wit, the President, of the Northport Smelting & Refining Company, the plaintiff herein; that he has read the foregoing complaint, knows the contents thereof and that the matters stated therein are true to the best of his knowledge, information and belief.

JEROME H. DAY.

Subscribed and sworn to before me this 28th day of June, A. D. 1919.

[Seal] JULIA O'ROURKE,
Notary Public in and for the State of Idaho, Residing at Wallace, Idaho. [12]

Exhibit "A."

"LONE PINE."

NOTICE IS HEREBY GIVEN that the undersigned having complied with the requirements of Chapter Six of Title Thirty-two of the Revised Statutes of the United States and the local customs, laws and regulations has located 1500 fifteen hundred linear feet on the Lone Pine quartz lode situated in Reservation Mining District, Stevens County, Washington, and described as follows:

Is 1500 linear feet in length and 600 linear feet in width, 300 feet on each side of center line. Stakes are places at each corner and each end of center line. Runs in a Northwesterly and a Southeastly direction, claim is situated about one half mile North of the Northwest fork of San Poil Creek and about two and a half miles in a southwesterly direction from O'Brien's ranch.

This notice is places at discovery. Discovery February 28, A. D. 1896. Located February 28, 1896.

Locators:

T. RYAN.

PHILLIP CREASOR.

CHARLES ROBINS.

Witness:

G. M. WELTY.

JOHN WELTY.

Filed for record Mch. 13, 1896, at 3:20 o'clock P. M., at the request of Phillip Creason and recorded April 4th, 1896.

(M-230.)

J. S. McLEAN,
County Auditor. [13]

Exhibit "B."

"LAST CHANCE" LOCATION NOTICE.

NOTICE IS HEREBY GIVEN that the undersigned having complied with the requirements of Chapter six of Title Thirty-two of the Revised Statutes of the United States and the local customs, laws and regulations has located fifteen hundred linear feet on the Last Chance quartz lode situated in Reservation Mining District, Stevens County, Washington and described as follows: Is 1500 linear feet in length and 600 linear feet in width. Posts are placed at each corner and each end of center line, and lies along the North side of the Black Tail mineral claim and the Lone Pine mineral claim, is situated about one-half mile North of the Northwest fork of the San Poil creek.

This claim lies in a northwest and southeasterly direction, 300 linear feet on each side of center line.

Discovered February 29, 1896. Located February 29, 1896.

Locators:

T. RYAN.

PHILLIP CREASON.

JAMES CLARK.

CHARLES ROBINS.

Attest:

JOHN WELTY.

Filed for record Mch. 13, 1896 at 3:20 o'clock P. M., at the request of Phillip Creasor and recorded April 4th, 1905.

(M-229.) J. S. McLEAN,
County Auditor.

Filed in the U. S. District Court, Eastern District of Washington. July 1, 1919. Wm. H. Hare, Clerk. H. J. Dunham, Deputy. [14]

UNITED STATES OF AMERICA.

In the District Court of the United States, Eastern District of Washington, Northern Division.

THE NORTHPORT SMELTING AND REFINING CO., a Corporation,

Plaintiff,

vs.

THE LONE PINE-SURPRISE CONSOLIDATED MINING CO., a Corporation,
Defendant.

Summons.

Action brought in the said District Court, and the Complaint filed in the office of the Clerk of said District Court in the City of Spokane.

JOHN H. WOURMS,
JOHN P. GRAY,

Plaintiff's Attorney.

The President of the United States of America,
GREETING: To The Lone Pine-Surprise Consolidated Mining Co., a Corporation.

You are hereby summoned to appear in the Dis-

trict Court of the United States, for the Eastern District of Washington, Northern Division, holding terms at the city of Spokane, within twenty days after service of this summons, exclusive of the day of service, and defend the above-entitled action in the court aforesaid; and in case of your failure so to do, judgment will be rendered against you, according to the demand of the complaint, now on file in the office of the clerk of said Court, a copy of which complaint is herewith served upon you.

WITNESS the Honorable FRANK H. RUDKIN, Judge of the United States District Court for the Eastern District of Washington, and the seal of said District Court this 1st day of July, A. D. 1919.

[Seal]

W. H. HARE,
Clerk.

By H. J. Dunham,
Deputy Clerk. [15]

United States of America,
Eastern District of Washington,—ss.

I hereby certify and return that I have personally served the within summons, together with the complaint in the within entitled action, upon the within named defendant by delivering to and leaving a true copy of the said summons and complaint with John Hoppe, at Spokane, Wash.

July 2d, 1919.

Fees: \$2.06.

J. E. McGOVERN,
United States Marshal.
By J. W. Dennison,
Deputy.

[Endorsed]: No. 3255. U. S. District Court, Eastern District of Washington. Northport Smelting and Refining Co., a Corporation vs. The Lone Pine-Surprise Consolidated Mining Co. Summons. Filed in the U. S. District Court, Eastern District of Washington. July 3, 1919. Wm. H. Hare, Clerk. By H. J. Dunham, Deputy.

In the United States District Court, Eastern District of Washington, Northern Division.

IN EQUITY—No. 3255.

NORTHPORT SMELTING & REFINING COMPANY, a Corporation,

Plaintiff,

vs.

LONE PINE-SURPRISE CONSOLIDATED MINING COMPANY, a Corporation,

Defendant.

Answer.

The defendant answering plaintiff's complaint:

I.

Admits the corporate existence, organization, citizenship and residence of each of the parties hereto as alleged in paragraphs I and II of said complaint.

II.

Answering paragraph III of said bill of complaint defendant admits that this Court has jurisdiction of the parties and subject matter of the suit by reason of diversity of citizenship, character of the action,

and value of the subject matter in controversy, but denies that the construction or application of section 2332 of the Revised Statutes of the United States is involved, inasmuch as it appears upon the face of the bill of complaint that each the Lone Pine and Last Chance Lode Mining Claims were located in February of 1896; that certificate of entry for each claim was issued on February 8th, 1898; and United States patent for each was issued on the second day of March, 1899, and this defendant alleges that the period of time prescribed by the statute of limitations for mining claims in the State of Washington was during all of said years and time intervening between the dates of said respective locations and the issuance of patent therefor at [16] least seven years.

III.

Answering paragraphs IV and V and VII of said bill of complaint defendant admits that the acts of locations of the Lone Pine Quartz Lode Mining Claim were performed in the manner and at the times and by the persons as alleged in said bill of complaint, excepting that the name of James Clark is omitted from the allegations of said complaint as a locator of the Lone Pine and defendant alleges that he was one of the locators thereof.

IV.

Answering paragraph VI of said bill of complaint, defendant denies that said locators or either or any of them immediately thereafter sunk a discovery shaft upon the lode as alleged in said bill of complaint, but on the contrary defendant alleges that

there did not exist in the State of Washington at the time of the locations of said Lone Pine Lode Mining Claim any statute or law requiring the sinking of any discovery shaft but defendant admits that subsequent to the date of location of said Lone Pine Lode Mining Claim at various times several shafts were sunk by the locators and their successors in interest on various portions of said lode mining claim and that said shafts disclose various veins which exist within the boundaries of said mining claim.

V.

Answering paragraph VIII of said bill of complaint, defendant admits the allegations therein contained.

VI.

Answering paragraph IX of said bill of complaint, defendant admits that the Lone Pine Quartz Lode Mining Claim is described correctly therein.

VII.

Answering paragraphs X and XI of said bill of complaint [17] defendant admits that plaintiff is and was at the commencement of this suit, the owner of said Lone Pine Lode Mining Claim and all veins, lodes or ledges having their tops or apices therein and of all rights that lawfully appertain to said mining claim, but this defendant has neither knowledge nor belief sufficient to enable it to answer the allegations contained in said bill of complaint as to the date when said plaintiff acquired ownership or right of possession to said Lone Pine Lode Mining Claim and therefore defendant denies that at any time

prior to the filing of this suit plaintiff was the owner of or in possession or entitled to the possession of said Lone Pine Lode Mining Claim, or the rights lawfully appertaining thereto and defendant denies that plaintiff is or ever has been the owner of, or is or ever has been in possession of any of said veins or lodes or ledges or any portion thereof that exists or exist easterly beyond a vertical plane passed downward through the easterly side-line of said Lone Pine Lode Mining Claim and defendant further denies that plaintiff has or ever has had any rights whatsoever to any of said veins as they extend beyond said vertical plane between the end-lines of said Lone Pine Lode Mining Claim extended in their own direction.

IX.

Answering paragraphs XIII, XIV and XV of said bill of complaint, defendant admits its ownership of said Last Chance Lode Mining Claim as therein described and the fact therein alleged relative to the location of said mining claim and the application for and issuance of United States patent thereto excepting that there are certain typographical errors in the description of said Last Chance claim as set forth in said bill of complaint.

X.

Answering paragraph XVI of said bill of complaint, defendant admits that there is within said Lone Pine Lode Mining [18] Claim a vein or lode of rock in place bearing gold, and silver and other valuable minerals and metals and defendant alleges that there are numerous veins or lodes of rock in

place bearing gold and silver and other valuable minerals and metals existing in said claim but defendant denies that any of said veins or lodes is commonly known as or called the Black Tail Lode or that the top or apex of said alleged Black Tail Lode or any lode crossed the southerly end-line of said Lone Pine Lode Claim or that it proceeds in a northerly or in any direction in said claim or that it crosses the easterly side-line of the Lone Pine claim at a point about 618 feet north from the southeast corner of said Lone Pine Lode Mining Claim or crosses any point on the easterly side-line of said claim or that it continues until it crosses the west boundary of said Last Chance Lode Mining Claim.

Defendant alleges that among the many veins existing within the boundaries of the Lone Pine Lode Mining Claim there is a vein commonly known as the "Lone Pine No. 2" vein which vein has been extensively mined by plaintiff and its predecessors in interest and that this vein extends through said Lone Pine Lode Mining Claim on a course or strike substantially at right angles to the length of said claim and that it crosses the easterly side-line of said Lone Pine claim at a point approximately 575 feet north from the southeast corner of said claim, making an angle of nearly 70 degrees with said side-line and thence continues until it crosses the west boundary of said Last Chance Lode Mining Claim; and defendant further avers that said vein last described does not at any point cross the southerly end-line of said Lone Pine Lode Mining Claim but that its course or direction is across the length of said Lone

Pine claim and not along or in the same direction as the length of the said Lone Pine claim.

Defendant is informed and believes, and therefore avers, that plaintiff asserts and pretends that the vein hereinabove [19] last described as the Lone Pine No. 2 vein is the vein alleged in its bill of complaint to be the so-called Black Tail vein, but this defendant denies that they are the same vein and on the contrary defendant alleges that the so-called Black Tail vein is an entirely different and distinct vein belonging to a distinct vein system and existing within the boundaries of the Black Tail Lode Mining Claim lying to the south of the Lone Pine Lode Mining Claim and that it is no part or in any way connected with the said Lone Pine No. 2 vein and that the strike and course of said Black Tail vein is substantially at right angles to the course and strike of said Lone Pine No. 2 vein.

And further answering said bill of complaint defendant alleges that there are several distinct and separate veins, lodes and ledges which together with their respective apices exist within the surface boundaries of said Lone Pine Lode Mining Claim, including the vein on which the discovery of said Lone Pine Lode Mining Claim was made and which discovery has been identified in said bill of complaint, by the discovery cut which bears north 51' west 670.8 feet distant from corner No. 1 of said claim, and which discovery vein is a distinct vein from said Lone Pine No. 2 vein. That each of said veins or lodes, including the discovery vein, and each of the respective apices thereof, has a course and extends

substantially across said Lone Pine Lode Mining Claim and in a direction substantially at right angles to the surveyed lode line and the side-lines thereof and also substantially at right angles to the Black Tail vein, also herein described and that none of said veins in said Lone Pine claim has a course or direction even *approximating* the direction of the length of said claim and that practically all of said veins and the apices thereof including said discovery vein cross both opposite side-lines of said Lone Pine Lode Mining Claim. [20]

XI.

Answering paragraph XVII of said bill of complaint defendant denies that the Black Tail vein is found extending on its downward course or otherwise or at all between planes drawn vertically and parallel to the end-lines of said Lone Pine claim extended easterly in their own direction or that said vein extends indefinitely or at all easterly or beyond a vertical plane drawn downward through the west boundary line of said Last Chance Lode Mining Claim or that said vein so far as known to plaintiff, passes underneath the *surfact* of said Last Chance Lode Mining Claim.

Defendant alleges, however, that the Lone Pine No. 2 vein described hereinabove does pass on its downward course beyond the easterly side line of said Lone Pine claim and that the direction of its true dip is south, between 40° and 50° east and that it passes underneath the *surfact* of said Last Chance Lode Mining Claim and that it enters said Last Chance claim on its strike.

XII.

Answering paragraph XVIII of said Bill of Complaint defendant repeats and reiterates the denials, admissions and allegations contained in paragraphs VIII, X, and XI of this answer and further denies that plaintiff is the owner in fee or otherwise or in possession of or entitled to the possession of any vein or lode or of any portion thereof throughout its entire depth or at all between planes drawn downward vertically and parallel to the end-lines of said Lone Pine Lode Mining claim and extended easterly in the direction of the end-lines of said Lone Pine claim.

XIII.

Answering paragraph XIX of said bill of complaint, defendant denies that it claims or has claimed an estate or [21] interest adverse to plaintiff's in or to said Lone Pine Mining Claim or in or to anything which lawfully pertains to said claim, or any part thereof between vertical planes drawn downward through the end-lines of said Lone Pine Lode Mining Claim and said end-lines extended easterly in their own direction or otherwise and defendant expressly disclaims any right thereto but defendant repeats and reiterates what it has alleged and set forth hereinbefore regarding its ownership of said Lone Pine No. 2 vein as it extends into said Last Chance Lode Mining Claim and defendant claims all parts and portions of said vein as it exists vertically beneath the surface of said Last Chance Lode Mining Claim.

XIV.

Answering the matters and things set forth and

alleged in paragraph XX of said bill of complaint, defendant reiterates and repeats what it has heretofore said in paragraph XIII of this answer.

XV.

Answering paragraph XXI of said bill of complaint, defendant denies that either said Lone Pine Lode Mining Claim or said Black Tail Lode as described in this answer is of a value of One Hundred Thousand Dollars (\$100,000.00) or any sum approaching said amount, their exact value being unknown to this defendant, but defendant admits that that portion of the Lone Pine No. 2 vein which exists vertically beneath the surface of its Last Chance Lode Mining Claim and which it is the owner of as alleged herein, is of a value in excess of One Hundred Thousand Dollars (\$100,000.00), and defendant admits that the segment of vein and ore bodies here in controversy exceed in value the sum of Three Thousand Dollars (\$3,000.00).

XVI.

Answering paragraph XXII of said bill of complaint defendant denies that it has at any time since July 19, 1916, by means of secret or any underground workings penetrated into the [22] Lone Pine Lode Mining Claims, or into any portion of the Black Tail lode which lies between the planes described in said Bill of Complaint or that defendant has at any time or in any manner extracted any ore or minerals therefrom; but defendant alleges that as owner of its Last Chance Lode Mining Claim, it has for upwards of three years last past been engaged in mining and extracting and removing ore from said Lone

Pine No. 2 vein as it exists vertically beneath said Last Chance claim; that none of said ore so mined and removed by defendant is a part of either the Lone Pine Lode Mining Claim or of the Black Tail vein, all of which is more fully alleged hereinbefore, and defendant further alleges that all of its mining of said Lone Pine No. 2 vein beneath said Last Chance claim has been conducted without any attempt at secrecy or concealment from plaintiff, of any of the facts regarding the same, but that plaintiff either knew or could have known by inquiry the nature and situs of the mining carried on by defendant during all of the time it has been mining as aforesaid.

XVII.

Answering paragraph XXIII of said bill of complaint defendant denies that it threatens to or will unless restrained by order of this Court extend its workings upon the Black Tail or any lode owned by plaintiff or remove or extract ore therefrom or perform any act that will in anywise injure plaintiff or cause it any loss or damage whatsoever, but, on the contrary, defendant alleges that it will at all times, as it has in the past, confine its activities and mine workings to the ores, veins and mineral deposits of which it is the sole and exclusive owner as in this answer set forth.

WHEREFORE, defendant prays that plaintiff take nothing by this action, that its bill of complaint be dismissed, and that defendant recover costs.

FRED S. DUGGAN,

WM. E. COLBY,

Attorneys for Defendant. [23]

State of Washington,
County of Spokane,—ss.

Chas. P. Robbins, being first duly sworn, on oath deposes and says:

That he is an officer, to wit, The President of the Lone Pine Surprise Consolidated Mining Company, the defendant herein; that he has read the foregoing answer, knows the contents thereof and that the matters stated therein are true to the best of his knowledge, information and belief.

CHAS. P. ROBBINS.

Subscribed and sworn to before me this 22d day of September, 1919.

FRED S. DUGGAN,
Notary Public in and for the State of Washington,
Residing at Spokane, Washington.

Filed in the U. S. District Court, Eastern District of Washington. October 1, 1919. Wm. H. Hare, Clerk. By Helen G. Ogle, Deputy. [24]

In the United States District Court, Eastern District of Washington, Northern Division.

IN EQUITY—No. 3255.

NORTHPORT SMELTING & REFINING COMPANY, a Corporation,

Plaintiff,

vs.

LONE PINE-SURPRISE CONSOLIDATED MINING COMPANY, a Corporation,

Defendant.

Decree.

This cause came on to be heard at this term and was duly submitted to the Court for determination and thereupon, upon consideration thereof, it was ORDERED, ADJUDGED and DECREED as follows, viz:

The Court finds in favor of the defendant and adjudges and decrees that plaintiff take nothing by its complaint herein; that its bill be dismissed, and that defendant do have and recover of the plaintiff its costs which are taxed at \$817.00.

Dated December 14th, 1920.

FRANK H. RUDKIN,
District Judge. [25]

In the United States District Court, Eastern District of Washington, Northern Division.

IN EQUITY—No. 3255.

NORTHPORT SMELTING & REFINING COMPANY, a Corporation,

Plaintiff,

vs.

LONE PINE-SURPRISE CONSOLIDATED
MINING COMPANY, a Corporation,
Defendant.

Notice of Presentation of Decree.

To the Above-named Plaintiff, and to John P. Gray and John H. W. Wourms, Its Attorneys:

You will please take notice that on Tuesday, the

14th day of December, 1920, at ten o'clock A. M., at the courtroom of the above-entitled court at the city of Spokane, Washington, the defendant will present to the Court the attached form of decree for signing and entry in the above-entitled action.

Dated December 4th, 1920.

WM. E. COLBY,
FRED S. DUGGAN,
Attorneys for Defendant.

Service of the foregoing notice and attached form of proposed decree is hereby admitted on us this 9th day of December, 1920.

JOHN P. GRAY,
Attorney for Plaintiff.

Filed in the U. S. District Court, Eastern District of Washington. Dec. 14, 1920. W. H. Hare, Clerk.
[26]

In the District Court of the United States for the
Eastern District of Washington, Northern
Division.

No. 3255.

NORTHPORT SMELTING & REFINING COM-
PANY, a Corporation,

Plaintiff,

vs.

LONE PINE-SURPRISE CONSOLIDATED
MINES COMPANY, a Corporation,

Defendant.

Opinion.

JOHN P. GRAY, and JOHN H. WOURMS, Attorneys for Plaintiff.

WILLIAM E. COLBY and FRED S. DUGGAN, Attorneys for Defendant.

RUDKIN, District Judge.

This is a suit to quiet title, for an injunction and for an accounting. The property involved is the segment of a vein or lode, bearing gold and silver, within the surface boundaries of the Last Chance Lode Mining Claim in the Republic Mining District. It appears from the bill of complaint that on the 28th day of February, 1896, the predecessor in interest of the plaintiff discovered a vein or lode bearing gold and silver and other valuable minerals and metals on vacant, unoccupied public lands of the United States, in what is now Ferry County, in this State; that on the same day they located the Lone Pine Quartz Lode Mining Claim by posting the usual notice at the point of discovery, and sunk a discovery shaft on the lode, disclosing a vein of quartz ore with one well-defined wall; that they immediately marked the location on the ground as required by law, and thereafter continued in the open, notorious and uninterrupted possession thereof; that they made application for patent in 1897, final proof and payment February 8, 1898, and received a patent under date of March 2, 1899; that on the 19th day of July, 1916, the plaintiff succeeded to the right and title of the original locators, by mesne conveyances, and [27] is now the owner of the

claim and of all veins, lodes or ledges having their apices therein throughout their entire depth; that subsequent to the 29th day of February, 1896, the predecessors in interest of the defendant located the Last Chance lode mining claim, lying east of the Lone Pine claim, and received a patent therefor under date of March 2, 1899; that within the Lone Pine claim is a vein or lode of quartz bearing gold and silver and other valuable minerals and metals, known as the Blacktail vein; that the top or apex of the Blacktail vein crosses the southerly end-line of the Lone Pine claim, and extends in a northerly and easterly direction through the claim, passing out of the east side-line at a point 618 feet north of the southeast corner; that the course of the vein is easterly on its downward course, and the plaintiff is the owner of the vein throughout its entire depth between planes, drawn downward vertically, from the south end-line and the point where the vein crosses the east side-line; that the defendant claims an estate or interest therein, and through secret underground works has extracted ore therefrom to the value of \$100,000.00.

The answer puts in issue the right and title of the plaintiff. The following rough sketch will illustrate, in a general way, the location of the different claims, and the course or strike of the different veins found therein: [28] The plaintiff contends that the vein designated on the plat as Lone Pine No. 2 is an extension or continuation of the Blacktail vein; that the Blacktail vein enters the south end-line of the Lone Pine claim and passes out

through the easterly side-line; that the downward course or dip of the vein is in an easterly direction and that the plaintiff is, therefore, the owner of the vein or segment in dispute throughout its entire depth. The defendant, on the other hand, contends: First, that the discovery vein crosses both side-lines of the Lone Pine claim; that the side-lines therefore become the end-lines, and that the end-lines thus established remain the end-lines for all purposes, and determine the question of extralateral rights on all veins found within the surface boundaries; second, that Lone Pine vein No. 2 is not an extension or continuation of the Blacktail vein and does not pass or cross beyond the south end-line of the claim; third, conceding that the Blacktail vein crosses both the south end-line and the east side-line, the plaintiff is nevertheless attempting to pursue the vein on its course or strike and not on its downward course or dip.

It is well-settled that the end-lines fix the limits beyond which the locator may not go in the appropriation of any vein or veins along their course or strike, but within the meaning of this rule the end-lines are not always those fixed or adopted by the locator. As said by the Supreme Court in *Del Monte Mining Co. vs. Last Chance Mining Co.*, 171 U. S. 55, 89:

“Our conclusions may be summed up in these propositions: First, the location as made on the surface by the locator determines the extent of rights below the surface; Second, the end-lines, as he marks them on the surface, with the single

exception as hereinafter noticed, place the limits beyond which he may not go in the appropriation of any vein or veins along their course or strike. Third, every vein 'the top or apex of which lies inside of such surface lines extended downward vertically' becomes his by virtue of his location, and he may pursue it to any depth beyond his vertical side-lines, although in so doing he enters beneath the surface of some other proprietor. Fourth, the only exception to the rule that the end-lines of the location as the locator places them establish the limits beyond which he may not go in the appropriation of a vein on its course or strike is where [29] it is developed that in fact the location has been placed not along but across the course of the vein. In such case, the law declares that those which the locator called his side-lines, are his end-lines, and those which he called end-lines are in fact side-lines, and this upon the proposition that it was the intent of Congress to give to the locator only so many feet of the length of the vein, that length to be bounded by the lines which the locator has established of his location."

Or, as said by Mr. Justice Miller, in his charge to the jury in *Stevens vs. Williams*, 1 *McCrary*, 480, 490.

"The plaintiff is not bound to lay his side-lines perfectly parallel with the course or strike of the lode, so as to cover it exactly. His location may be made one way or the other, and it may

be so run that he crosses it the other way. In such event, his end-lines become his side-lines, and he can only pursue it to his side-lines, vertically extended, as though they were his end-lines, but if he happens to strike out diagonally, as far as his side-lines include the apex, so far he can pursue it laterally.”

And in *Walrath vs. Champion Mining Company*, 171 Id., 293, 307, after quoting the language of Mr. Justice Field, in *Iron Silver Mining Co. vs. Elgin Mining Co.*, 118 U. S. 196, 198, the Court said:

“The Court, however, did not mean that the end-lines, called such by the locator, were the true end-lines, but those which ‘are crosswise of the general course of the vein on the surface.’ ”

It is equally well settled that end-lines once established cannot thereafter be changed or, as said by the Circuit Court of Appeals for this Circuit in *St. Louis Min. & Mill Co. vs. Montana Min. Co.*, 104 Fed. 664:

“As to the first contention, it is a well-settled proposition that a mining claim can have but two end-lines, and that, end-lines having been once established, they become the end-lines for all veins found within the surface boundaries.”

It was conceded at the trial, or at all events there is no controversy over the fact that the strike of the discovery vein on the Lone Pine claim is substantially parallel to the end-lines of the claim and that the discovery vein passes out through and beyond both side-lines. Under these facts, had the

present controversy arisen under the Act of 1866, extralateral rights would unquestionably be limited by the side-lines and not by the end-lines, for under that Act the grant was limited to the discovery [30] vein or lode and was likewise limited by the surface boundaries. As said in *Walrath vs. Champion Mining Co.*, 63 Fed. 552, 556:

“The locators were only required to designate the lode in their notice of location. The lode was the principal thing. The surface ground was a mere incident thereto, for the convenient working thereof.”

The Act of 1872, carried into the Revised Statutes as section 3222, made certain changes in the Act of 1866 and extended the grant to the exclusive right of possession and enjoyment in the locator of all veins, lodes and ledges throughout their entire depth, the top or apex of which lies inside of the surface lines extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side-lines of the surface location. But did this change in the law work any change in the existing rule as to end-lines and side-lines, or as to the mode or manner of their ascertainment? It would seem not. Thus, in *Walrath vs. Champion Mining Co.*, 63 Fed. 552, Judge Hawley said:

“The Act of 1872, in granting all other veins that were within the surface lines of previous locations, did not create any new lines for such other veins, nor invest the Court with any

authority to make new end-lines for such other veins, and it is apparent from an examination of the statute that the Court has no power to make a new location for every vein that may be found within the surface lines of the location, and thereby enlarge the rights of the original locators. When the end-lines of a mining location are once fixed, they bound the extralateral rights to all the lodes that are thereafter found within the surface lines of the location.”

The decree in this case was modified in one unimportant particular by the Circuit Court of Appeals, 72 Fed. 978, and affirmed by the Supreme Court of the United States, 171 U. S. 293, under the same title. This language of Judge Hawley was quoted with approval by Judge Gilbert in *Montana Mining Co. vs. St. Louis Min. & Mill Co.*, 102 Fed. 430. In that case the Court said:

“It is earnestly contended that the complaint does not state a cause of action, for the reason that it appears therefrom that the vein, which the defendant in error claims the right to pursue under the surface so conveyed to the plaintiff in error is not the discovery vein, and that there is no allegation that the discovery vein runs in any particular direction, or that its strike would intersect the end-lines, or that it runs lengthwise [31] of the claim, rather than across, or that it dips in any given direction, and that for want of these allegations the complaint wholly fails to show a right in the

defendant in error to pursue beyond its vertical side-lines the vein from which the ores in controversy were taken.”

The learned Judge did not question the correctness of the proposition that extralateral rights on all veins within the surface boundaries are controlled by the course or strike of the discovery vein, but proceeded to show that the complaint contained the further distinct allegation that the defendant in error was the owner of the vein from which the ores in controversy were extracted, and therefore stated a cause of action and was sufficient to support the judgment.

In the leading case of *Mining Co. vs. Tarbet*, 98 U. S. 463, after a reference to the Act of 1866, Mr. Justice Bradley said:

“The Act of 1872 (17 Id. 91) is more explicit in its terms; but the intent is undoubtedly the same, as it respects end-lines and side-lines, and the right to follow the dip outside of the latter. We think that the intent of both statutes is, that mining locations on lodes or veins shall be made thereon lengthwise, in the general direction of such veins or lodes on the surface of the earth where they are discoverable; that the end-lines are to cross the lode and extend perpendicularly downwards, and to be continued in their own direction either way horizontally; and that the right to follow the dip outside of the side-lines is based on the hypothesis that the direction of these lines corresponds substantially with the course of the lode or vein

at its apex on or near the surface. It was not the intent of the law to allow a person to make his location crosswise of a vein so that the side-lines shall cross it, and thereby give him the right to follow the strike of the vein outside of his side-lines. That would subvert the whole system sought to be established by the law. If he does locate his claim in that way, his rights must be subordinated to the rights of those who have properly located on the lode. Their right to follow the dip outside of their side-lines cannot be interfered with by him. His right to the lode only extends to so much of the lode as his claim covers. If he has located crosswise of the lode, and his claim is only one hundred feet wide, that one hundred feet is all he has a right to. This we consider to be the law as to locations on lodes or veins.

“The location of the plaintiff in error is thus laid across the Titus lode, that is to say, across the course of its apex at or near the surface; and the side-lines of the location are really the end-lines of the claim, considering the direction or course of the lode at the surface.”

In *Walrath vs. Champion Mining Co.*, 171 U. S. 293, the Supreme Court said:

“Appellant’s right upon the Contact vein is given by [32] this statute. What limits this right extralaterally? The statute says vertical planes drawn downward through the end-lines of the location. What end-lines? Those of and

as determined by the original location and lode, the Circuit Court of Appeals decided. Those determined by the direction of the newly discovered lodes, regardless whether they were originally intended as end-lines or side-lines, the appellant, as we have seen, contends. The Court of Appeals was right. Against the contention of the appellant the letter and spirit of the statute oppose, and against it the decisions of this Court also oppose.

“The language of the statute is that the ‘outside parts’ of the veins or lodes ‘shall be confined to such portions thereof as lie between vertical planes drawn downwards * * * through the end-lines of their locations * * * .’”

Counsel for plaintiff call attention to the fact that there was in that case but one original vein and that the claim was located under the Act of 1866. True, the claim was located under the Act of 1866, but it is equally true that the Court was construing the Act of 1872, for after quoting section 3 of that Act, the Court said: “Appellant’s right in the Contact vein is given by this statute.” Furthermore, in an earlier part of the same opinion, the Court quoted with approval the language of Mr. Justice Bradley in the Tarbet case, to the effect that the intent of the two Acts with reference to end-lines and side-lines is one and the same. In the same opinion the Court makes use of the following language upon which the plaintiff apparently places much reliance: “These propositions we affirm, with the addition that the

end-lines of the original veins shall be the end-lines of all the veins found within the surface boundaries.”

It is argued that the Court here had reference to original veins within the surface boundaries of a single claim, but this argument seems rather tenuous and farfetched. If all veins within the surface boundaries had in fact the same end-lines or side-lines, or paralleled each other, no question could arise as to the extralateral rights, because such rights would be the same, whether one or another vein was controlling. If, on the other hand, one vein crossed the side-lines and another the end-lines, as is the claim here, the statement would seem meaningless and contradictory, because the original veins could have no common [33] side-lines or end-lines. The statement, however, follows the quotation of the summary of Mr. Justice Brewer in the Del Monte case, and inasmuch as the learned Judge there referred throughout to a single vein or lode, I am of opinion that the statement was added for the purpose of making clear the proposition that extralateral rights on all veins are controlled by the same set of end-lines. The terms principal, original, primary, secondary, accidental and incidental have all been employed at different times to describe the different veins found within the same surface boundaries, but their meaning is not entirely clear in all cases. They may refer to the relative importance or value of the different veins or to their relations to each other; they may refer to the time of discovery; or they may well be

used to distinguish between the discovery vein and other veins within the same surface boundaries, and beyond question they are most frequently used in this latter sense. Thus in an earlier part of the opinion in the Walrath case, the Supreme Court refers to "the original location or lode" and in a later part, to the strike or dip of "The original vein." In the first instance, the Court seems without doubt to refer to the discovery vein because it speaks of the original location or lode, and there is nothing in the context to indicate that the word was used in any different sense in other parts of the same opinion.

But the chief reliance of the plaintiff is the decision of the District Court, in *Clark-Montana R. Co. vs. Butte & Superior Copper Co.*, 233 Fed. 547. It appears from the map or plat found in the opinion in that case that the Jersey Blue vein crosses the west end-line of the Blackrock claim, and that the Rainbow, or discovery, vein crosses both side-lines of the same claim. The Court held that extralateral rights were controlled by the course or strike of the Jersey Blue vein, rather than by the course or strike of the discovery vein, merely saying: [34]

"Neither the Jersey Blue nor the Rainbow is a secondary vein. Both are primary. The Jersey Blue overlaps the Rainbow. Extralateral rights based on it extend east beyond where the like right based on the Rainbow begin. Indeed, taking the course of the Jersey Blue where fixed by plaintiff south of the Rain-

bow, it is probable it crosses the Blackrock south side-line east of the Elm Orlu east end-line. That the Rainbow crosses both side-lines is not controlling. There can be but one set of end-lines, and if the located end-lines fix extralateral rights upon one vein, as they do upon the Jersey Blue, they fix them upon all veins.”

Ordinarily, I would feel constrained to defer to the superior knowledge and experience of the learned Judge who wrote that opinion, in matters of this kind, but if the question here involved was at all decisive of the rights of the parties in that case, I confess I cannot understand why it should receive such scant consideration at the hands of the Court in a well-considered opinion, or why the question was not even referred to by either of the Appellate Courts to which the case was carried.

248 Fed. 609;

249 U. S. 11, where the title of the case was reversed.

The decision, itself, is out of harmony with the language of the Courts in the many extralateral right cases decided during the last half century. In all of these cases it seems to have been taken for granted, if not decided, that the principal effect of the Act of 1872, was to extend the grant so as to include all veins or lodes having their top or apex within the surface boundaries, but with the same end-lines, the same side-lines, and the same extralateral rights as properly appertain to the discovery vein, which forms the basis of the location and patent. Counsel for plaintiff concede that the

course or strike of other veins have no controlling effect unless their presence was known at the time of location, but the testimony in this case amply demonstrates the danger of making valuable property rights dependent upon what was known or unknown a quarter of a century ago. Furthermore, there was no known vein extending lengthwise of the Lone Pine claim at the time of location, or even at the time of patent. There was nothing on the surface to indicate that the Blacktail vein extended that far to the north, [35] and while vein No. 2 was, perhaps, known at the time of discovery and was certainly known very soon thereafter, yet that vein, so far as then known, extended crosswise of the claim, and there was not even a suspicion until years afterwards that it turned abruptly to the south, almost at right angles, and crossed the south end-line, if, indeed, that fact can be said to be established at this time. If the contention of the plaintiff is correct, the discovery vein on the Lone Pine claim has no extralateral rights. It could not be pursued along the strike or course of the vein beyond the north end-line of the claim. I fail to see how the right of the owner of the claim to pursue the vein on its downward course or dip beyond the end-line could be defeated except by some person showing a prior right. If this is true, why should side-lines or end-lines now depend upon the fortuitous circumstance that it has recently been discovered that vein No. 2 in fact crosses the south end-line. The locators of the Last Chance claim knew that the discovery vein on the Lone Pine crossed

the side-lines and they had a right to assume, therefore, that no extralateral rights would ever be asserted in that direction.

These views seem in entire harmony with all law-writers on the subject. Thus, in discussing the different classes of veins within the same surface boundaries, Judge Lindley says:

“One thing seems quite certain—the law, as at present construed, may compel the inquiry, where two veins are found to exist within a claim, as to which one was discovered first—that is, which vein was the basis of the location—and there exists to this extent a distinction between the two classes of veins.”

Lindley on Mines, 3d ed., sec. 594.

Commenting on this statement in the Harvard Law Review, Mr. Henry Arnold says:

“In other words, where two veins are found to apex within the surface territory of one location, no distinction is to be drawn between them, but both are to be treated as of equal dignity—unless a question arises as to some point concerning, or dependent on, the drawing or character of the boundaries, of the location, in which event, but in which event only, inquiry as to which is the discovery vein (that is, as to which vein served as [36] the basis of location) becomes of moment.”

22 Harvard Law Review, 278.

“Extralateral rights on secondary (incidental) veins—that is, on veins other than the discovery (original or principal) vein—are de-

terminated with reference to those lines, which for the discovery (original or principal) vein's extralateral rights are the end-lines of the claim."

Costigan on Mining Law, p. 440.

"There can be but one set of end-lines for all the veins covered by the patent, and where departure from one or both side-lines renders it material, only the discovery vein can be used to determine what are the planes of the end-lines."

Morrison's Mining Rights, 15th ed., p. 215.

The doctrine of extralateral rights has been the subject of more or less criticism in the past. All the authorities agree that side-lines and end-lines do not depend on the mere act of the locator, and if it is now held that they do not depend on the course or strike of the discovery vein another element of uncertainty is introduced and the administration of the mining laws will become still more vexatious and difficult.

If I am correct in these conclusions, the plaintiff can assert no extralateral rights beyond the east side-line of the Lone Pine claim, and it becomes unnecessary to discuss or consider the debatable questions whether a connection between vein No. 2 and the Blacktail vein has been established with the degree of certainty required by law; or whether the plaintiff is seeking to follow or pursue the vein on its course or strike rather than its downward course or dip. I reach this conclusion with the less hesitation because it leaves both parties in the full possession and enjoyment of all rights claimed by them and their predecessors in interest for more than twenty

years after the location of their respective claims.

For the reason stated the bill of complaint should be dismissed, and it is so ordered.

Let a decree be entered accordingly.

Filed in the U. S. District Court, Eastern District of Washington. Nov. 3, 1920. W. H. Hare, Clerk.
[37]

No. 3255. Statement of Facts. Filed in the U. S. District Court, Eastern District of Washington. May 16, 1921. W. H. Hare, Clerk.

In the United States District Court, Eastern District of Washington, Northern Division.

IN EQUITY—No. 3225.

NORTHPORT SMELTING & REFINING COMPANY, a Corporation,

Plaintiff,

v.

LONE PINE-SURPRISE CONSOLIDATED MINING COMPANY, a Corporation,

Defendant.

Before Hon. FRANK H. RUDKIN, Judge.

APPEARANCES:

For the Plaintiff: Mr. JOHN P. GRAY.

Mr. JOHN H. WOURMS.

For the Defendant: Mr. FRED S. DUGGAN.

Mr. W. S. COLBY.

Statement of Facts.

BE IT REMEMBERED, that the above-entitled cause came on regularly for trial in the above-en-

titled court on Monday, August 23d, 1920, before Hon. FRANK H. RUDKIN, Judge, the plaintiff being represented by its attorneys, Mr. John P. Gray and Mr. John H. Wourms, the defendant being represented by its attorneys, Mr. Fred S. Duggan and Mr. W. S. Colby; whereupon the following proceedings were had: [3]

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Mr. GRAY.—May it please your Honor: The suit is one to quiet title; that is, to quiet title to the extratlatlateral portion of the vein called the Black Tail vein which apexes in part in the Lone Pine Mining Claim, and for a considerable distance in the Black

Tail Mining Claim, which dips downward beneath the Last Chance Mining Claim; and it is to that portion of the vein beneath the Last Chance or extralateral portion between the plane of the south end-line of the Lone Pine and a parallel plane drawn thereto at the point of departure of that vein through the side-line. The vein from the east side-line passes into the claim through the south end-line, and out of the plane through the east side-line.

The evidence will show that in the beginning of the mining claims at Republic, two of the first claims located were the Quilt, which lies just south of the Black Tail, and the Black Tail; subsequently the Lone Pine and later the Last Chance were located.

The Black Tail vein is a large quartz vein, and one can stand upon the surface and see clearly traversing the country in a general northerly direction, it passes through the north end-line and over into the Lone Pine Claim. The locators of the Lone Pine visited the Black Tail discovery. They were shown the croppings of the vein there by the locator who was upon the ground, and were told that the ground on the north end was open to location. Thereupon they went over and located the Lone Pine claim. The claim is located in a general northerly and southerly direction. At the time of the location, there was cropping out, at a point which will be described to your Honor, but approximately at the point where I now point to your Honor, a large quartz vein. [4] The veins in that locality, which was well known to the locators at that time at a general northerly and southerly direction.

Passing up the hill, they found outcropping a vein material at a point which is marked on this map "Discovery cut" by patent notice, and on up northerly they also found croppings clear up to the north end-line of the claim. In other words, the locators who went upon there, finding croppings of what is really the Black Tail vein and finding other croppings and vein material on up the hill, located the claim as they assumed covering the strike of this Black Tail vein. The discovery notice was placed at the point midway between these end lines where I now hold my pointer. At that place there is disclosed now some small stringers of quartz. There they posted their notice. Those stringers of quartz, the evidence I think will show, through crossovers from one stringer to another in one way or another can be followed from stringer to stringer until probably a direct connection can be made of quartz, among the various stringers which were developed in that block of ground over to the side-line. The Black Tail vein showing there may be called a vein because it is what miners recognize as a small quartz vein, but it has no commercial value, and the croppings up near the north were all primary veins of the Lone Pine Claim discovered at a prior time to the location of the [5] claim and are discovery veins of that claim. This vein here was known, and was really the principal object in making the location. The principal object in making the location was to acquire this extension. The Black Tail cropping out there and there (indicating), and the first work that these gentlemen who made the location did was upon

this claim here. Later it was patented. The mineral surveyor who made the patent survey also went up the hill, following the way that the old prospectors had gone, and he determined that this vein extended lengthwise of the claim. Anyway at the time of his patent survey, that was his opinion, and that is the evidence upon the ground. Later developments showed, however, that as a matter of fact instead of that extending on up through the claim, it bends around and passes out of the side-line. Now, we claim that we have the right to follow that vein from its dip or downward course beneath the surface of the adjoining property. [6]

In order that your Honor may have a general idea of the defense, my friends on the other side of the table assert that as a matter of fact there are two veins, that this vein comes over here and I don't know what happens to it—they will perhaps explain it to you—and the vein—the ore which is now in the vein to which I am pointing is a separate and distinct vein and passes out of the claim at its side-line and is not a part of the Black Tail.

They also assert in their answer that the discovery vein of the claim is the vein where the notice was posted and that that passes out through the side-lines of the claim, and that there can be but one set of end-lines. Therefore, what they term the discovery veins passes out the two side-lines; that there can be no extralateral rights except through the end-lines. We will be in this agreement upon that point I assume because as I say it is our contention that the veins as found by the locators at

the time they made the location are all primary veins.

I think that is a brief outline of the facts in this case.

I should say to your Honor that there is no disagreement between us upon the surveys. We have compared them and in matters of that kind there is no controversy.

The COURT.—I don't know what this case is about, but I will inform you in advance that I expect to limit to a reasonable extent the number of what is entirely expert witnesses. I don't know how many you expect to call.

Mr. GRAY.—I expect to call Mr. Searles to go completely over this and the other witnesses will be short.

The COURT.—I think half a dozen experts on each side can prove or disprove as much as a million. [7]

WHEREUPON, the following testimony was offered on behalf of the plaintiffs:

Testimony of Fred Searles, Jr., for Plaintiff.

FRED SEARLES, Jr., a witness called on behalf of the plaintiff, after being first duly sworn, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. State your name, residence and occupation.

A. My name is Fred Searles, Jr.; I reside at Nevada City, California; my occupation is that of a mining geologist.

(Testimony of Fred Searles, Jr.)

Q. Where were you trained for the practice of your profession and what experience have you had?

A. I received my technical education in the profession of a mining geologist at the University of California, from which institution I graduated from the Department of Mining and Geology in 1909. For some years prior to that time I had been engaged in the mining business in the sense that I worked underground in the mines in California as a practical miner, mucker and various capacities. Subsequent to graduation, I spent a year at the University of California as an instructor in mineralogy and geology and thereafter entered upon the practice of the profession of a mining geologist. In the course of the practice of that profession I entered employment with the Goldfield Consolidated Mining Company as its geologist and I continued in that capacity for more than four years. During the same period I was geologist for the Mason Valley Copper Company and examined the properties for the Canadian Exploration Company and certain exploration companies of the Gunn-Thompson people [8] and became familiar with most of the mining camps and mining districts in the states of Nevada and California. During and subsequent to that time I have also become familiar with a large number of mines in all of the other mining states of the United States, in Canada, in Ontario and British Columbia and Alaska and Mexico. In 1913 I spent some time in studying the gold veins of the Rand district in

(Testimony of Fred Searles, Jr.)

South Africa and the diamond mines in that country. I spent a year in prospecting and exploration work in China, Sumatra and other parts of the Dutch East Indies and I am familiar with portions of the Malay Peninsula. I continued the practice of this profession until June, 1917. From that time until July, 1919, I was otherwise engaged. Since that time I have practiced the same profession continuously and am at present engaged in consulting work in advising and directing the development and exploration of certain silver deposits in Mexico and two small gold mines in California.

Q. Are you operating the gold mines yourself?

A. Yes, I am operating two small gold mines in Sierra County, California. I think that answers the question.

Q. Have you developed any of these mines yourself, taken hold of them and developed them?

A. These mines in Sierra County that I am operating now I became interested in as a result of finding that some of the high-grade ore bodies in an abandoned mine were cut off by some post-mineral faults and in the development a segment of these veins was overlooked in the prior operations. Some very rich ore has been encountered. [9]

Q. Have you visited the mining properties of the plaintiff and defendant at Republic?

A. Yes, sir, I have visited, I believe all of the accessible workings in the Last Chance and Surprise and Lone Pine claims and portions of those in the Black Tail and Pearl claims, having spent

(Testimony of Fred Searles, Jr.)

in the study of these mines about eleven days.

Q. Before I proceed to the discussion, I wish you would state to the Court the color scheme which is used upon the maps.

A. On all the maps except the composite map the red color is used for the designation of the vein material. The green lines on the surface map are contours showing the configuration of the surface. The black lines are claim lines; and in the case of the underground map, show the boundaries of the workings. I might say concerning the composite map, Plaintiff's Exhibit 2, that due to the relatively simple nature of this ore deposit it was thought unnecessary to submit separate level maps showing the condition and structure existing on each level, and that these conditions are shown on one map which shows all of the levels. In order to distinguish between the levels shown on that composite map it has been found necessary to put some color on the levels so that they may be readily distinguished. These colors have nothing to do with the structure of the ground. But the red lines and the blue lines shown crossing these workings in the various places indicate, respectively, the vein and gouges or faults, fissures, which are disclosed on these workings. [10]

Q. Will you state to the Court what you have found upon the premises in controversy, the character of the rocks, the character of any vein or veins which you have found there, their course and strike, the relation which they bear to the lines of the

(Testimony of Fred Searles, Jr.)

claims. In doing so, to cover the field which you have observed, use such maps or exhibits as are upon the wall or which you may desire to produce.

A. The country rock in which the Lone Pine, Black Tail and Last Chance mines occur, is what is known as andesite breccia. That means a rock which was poured out from a volcano in such a way that the liquid portions of the lava solidified at different times so that the liquid portions got mixed up with some parts of the rock which had already been chilled, so that the result shows all through this rock a structure of elastic or fragmentary breccia. I have a sample of this rock marked for identification "A." This was taken from the 300 level of the Pine, and shows the general character of this rock, the fragmentary nature, the angular fragments surrounded by other rock which is consolidated from a liquid condition.

Now, there are a number of interesting things about that rock, but the attribute which I wish to emphasize particularly is that in spite of the nature of its manner of accumulation and the brecciation which is observable in small specimens, the entire mass of rock is singularly homogeneous. I mean by that it does not have within it [11] planes of stratification or planes which are referable to the manner in which it was accumulated, such as, for instance, the bedding planes in sandstone and quartzite. The whole mass of rock subsequent to its consolidation was a massive homogeneous material.

(Testimony of Fred Searles, Jr.)

Now, one well-known fact in dynamic geology is that when a rock of that kind which is homogeneous and without plane of easy slipping is subjected to a very—

Q. Mark that rock our Exhibit No. 5, if you please. You can mark it later and go right on.

A. When the accumulation of homogeneous rock such as this is is subjected to excessive compressive stresses, such as a force of compression so great that the rock cannot stand it, compression mounting up to a point that exceeds the elastic limits of the rock, there are set up in it two series of conjugate fissures neither of which is parallel to the direction of stress. The action is entirely similar to what takes place in block of granite that we put in a testing-machine and stress until it fails. Under that condition a block of granite with enormous pressure brought in a given direction on it, there are set up cracks in the granite the general direction of neither of which is parallel with the force but which makes such an angle that the direction of the force is at the bisectrice of the angle of intersection. Now, if we think of a mass of this andesite breccia which has been acted upon by an enormous compressive force— [12] I would like to draw a sketch which would show what would happen. (Witness drew sketch.) Suppose we have such an accumulation of rock on the lower side of the line which I marked A-B on this sheet which will be—

Q. No. 6?

A. Marked Exhibit No. 6. Suppose that that block

(Testimony of Fred Searles, Jr.)

of rock is affected by an enormous stress from this direction, as, for instance, if an intrusion of some other rock were forced into the country over in this direction, there would be set up in this rock lines of fracture which are essentially parallel or sub-parallel and which run in two directions, something as shown by the black lines going in the two directions on this exhibit. Now, there are certain things to note about structure in a rock which is formed by this method. One of the interesting things is that these two systems of cracks are formed essentially at the same time. They are quite strictly contemporaneous. They result from a strain on the rock so great that it cannot stand it and suddenly these cracks shoot out just as in the case of a piece of glass or ice that is compressed by some shock to a point that it can no longer stand. Now, when these cracks are formed in a rock they don't constitute a vein, of course, but if we think of a mass of rock there which has been affected by a structure of that kind as being saturated [13] with hot mineral solutions emanating possibly from an intrusion over here, the entrance of which gave rise to the structure itself, then each of these little cracks and crevices, the major fissures and the very pores and interstices of the rock itself become full and saturated with these solutions, but the solutions act on everything that they come in contact with. The rock itself between the fissures is altered by these solutions, the feldspars in the andesite are changed, pyrite is introduced, but along the fissures

(Testimony of Fred Searles, Jr.)

where circulation exists the action is more vigorous and it can be easily shown that the quantity of solutions which circulate along long fissures, major fractures in a rock, is very, very greatly in excess of the solutions which come in contact with the small cracks which have only a short extent either in the direction of the strike or the dip. That is largely because of friction. The amount of solution that circulates along a fissure a thousand feet long, may easily be millions of times as great as that which comes in contact with a little crack which has only a short extent, and the result is that in the small cracks and fissures, we have deposits from these solutions, small veins. I show a little red along this minor crevice in the cracks indicating that a certain amount of quartz and vein material is deposited there, but to form an important vein it takes a very large quantity of solutions, because mineral vein solutions are dilute, and to form a thousand [14] tons of quartz, we have to have a great many thousands of tons of solutions. Now, it may easily happen, and does happen, and has happened in this instance, that where certain of these conjugated fissures come together, we may have the quartz and mineral matter which is deposited by the solutions, which circulate along running continuously from a fissure which has one direction into a fissure which has another direction, so that from what were two fissures we have a final result after this action is completed a continuous quartz vein which having one direction in one part of its course turns

(Testimony of Fred Searles, Jr.)

around where the two fissures come together and runs off in the direction of the other fissure, and yet that quartz, that vein may be absolutely continuous in its structure because the accumulation and force which gives it this banding, and which gives the continuous vein which the miner can follow, swings right around in one of those fissures in the direction of one of them and runs off in the direction of the other.

Now, another attribute of these fissures formed by compression, by the release of stress in this manner, they are not planes of large movement, they do not have much motion between the walls. And the third attribute is that although the fissures themselves are the result of compressive stress, there cannot be great compression between walls of the fissures, that is, as though great stress in this direction produced a tendency to pull apart in this direction, so that those fissures could stand open even in places and [15] be avenues for ready circulation. I have attempted to discuss this consideration because I believe that is the history of the veins in Republic district and particularly of the veins in the Last Chance and Surprise and Lone Pine and Black Tail claims. [16]

Q. Mr. Searles, before you leave that diagram, the stress which compress the block of ground represented by the arrows and coming from the direction from which the arrows come.

A. That is correct.

Q. Go ahead.

(Testimony of Fred Searles, Jr.)

A. Before I leave the subject of the formation of the vein along two fissures by the swinging around of the quartz from one fissure into the other, I have here a photograph which was taken in a property immediately adjoining these under discussion which shows actually just that occurrence.

Q. Mark this.

(Photograph marked Plaintiff's Exhibit 7 for identification.)

A. I might say that we expect to have an enlargement of this photograph here by noon, and I would like to introduce the enlargement rather than this. This photograph was taken of the back of the drift, the camera being placed on the floor looking up, and this shows a quartz vein coming in from the left-hand side of the picture near the red letter "A" on the photograph, and the line of fissure of that vein which I can say extends along that drift for a good many feet is shown by the difference in color on the photograph, running off in the extension of the direction in which the vein enters the photograph. On the opposite end of the photograph near the letter "B" the vein is shown to depart in what would be the southeast corner of the picture and that vein runs along in its fissure for a long distance along that drift. So that we have in the center of this picture the intersection [17] of two fissures, one of those fissures continuous in its own direction, but the quartz vein which follows that fissure swings right around shown by the struc-

(Testimony of Fred Searles, Jr.)

tural lines within the quartz and takes up the direction of the other fissure.

Q. When you speak of the structural lines within the quartz, what are they?

A. The ore in these veins was deposited in bands. As one stands and looks at a face of the veins anywhere in the mine you can see a distinct banding of the quartz, little dark lines in it, and some alternate bands of calcite mixed in with the quartz so that it is not necessary to look at the walls of the vein in general to know in which direction it is running. Any miner would not have any difficulty in looking at the vein and seeing in which direction it goes. And it is that structural condition of the quartz which in part enables one to determine its strike or dip and its continuity along its course.

Now, the condition which is shown in this photograph is shown in very many places on these properties. The small stringers that exist throughout the country rock, there are hundreds of them in all the workings, very often turn around even through an angle of ninety degrees, coming around on one fissure and going off on the other fissure with absolutely no structural break in the banding of the material. So that we have in very many instances within the property in miniature just what we have in the main vein which runs through the property on a larger scale. The surface map of the Lone Pine adjoining property, Plaintiff's Exhibit 1, gives some idea of the analogy [18] between the structure in this area and that which

(Testimony of Fred Searles, Jr.)

I have just attempted to sketch as being the result of a compressive force acting on a block of homogeneous rock. We find that there are many minute fissures through this ground which have a general northeasterly course, and we have many others which have a northwesterly course. In this Lone Pine claim they are perhaps less numerous than the northeasterly ones, but they exist. And they exist also in the Black Tail and the other properties. By no means all of these small fissures and stringers and veinlets and small veins are shown on this map, for the reason that more than fifty per cent of the area under consideration is obscured by glacial drift. It is only in a portion of the property that the bedrock surface of the veins crops out so that it is open for inspection. And there is no reason to doubt that a great many more small veins and stringers exist on this property than are shown on the map. To emphasize the degree to which this filling of the country with small fissures exists, I will say that in the cross cut of the Pine one hundred which runs along the Pine claim in a general northerly direction there are more than forty-five small veins and stringers disclosed, and the aggregate number shown in all the workings is certainly several hundred. While there are very numerous small features of this kind, they are insignificant compared with two big veins which exist through this property. One of these veins we are not very much concerned with, called the Surprise vein, or the Surprise-Pearl vein, because it traverses both

(Testimony of Fred Searles, Jr.)

the Surprise and Pearl mining claims. That has a general northerly or slightly northwesterly [19] strike, and is a very strong persistent feature from which considerable quantities of good-grade ore have been removed. The other big vein is the Black Tail vein. That vein enters the area covered by this map in the Black Tail claim near the Discovery, and is distinctly traceable on the surface through the Black Tail claim, crossing its end-line against the Pine, through the Pine claim, curving around to the northeast and crossing the Lone Pine side-line and entering the Fraction claim. From there on to the northeast its outcrop is obscured by glacial drift so that I am unable to state exactly where it lies within the Last Chance Claim. These two veins are so much bigger and stronger than the hundreds of minute fissures that exist through that country that I think it would be fair to say that either one of them contains a great many more times more quartz and vein material than all the hundreds of little fissures which exist through the claim. They are the only two fissures in this property which have any commercial value.

Returning to the Black Tail vein, which is the one with which we are concerned, I would reiterate that that is traceable with absolute continuity, from the Black Tail through the Lone Pine into the Fraction claims, with the exceptions which I will now enumerate. There are a few small transverse post-mineral faults which interrupt the continuity of the vein, but all of these are visible mainly on the

(Testimony of Fred Searles, Jr.)

surface. Near the stope at a point not far from the discovery of the Black Tail claim, and are shown on this map by two blue lines, one through point 40-C and the other just south of the open stope. These are interruptions to the vein. [20] They displace it at a distance of twenty-five or thirty feet. But they are a very common feature to veins. There is, I believe, no doubt whatever that the segments on the two sides are the same vein, simply separated by this post mineral movement. North of the fault at 40-C the vein is clearly traceable on the surface continuously for a distance of 400 feet, having throughout that a distance a width of from four to eight feet of solid quartz and additional stringers. It is a good strong vein cropping continuously through that distance. Just northerly of the point marked T-875, where a small shaft or pit has been sunk a few feet on these croppings, the croppings run under an area of glacial drift. For a distance of perhaps one hundred fifty feet along the strike of the vein, and to the west down toward the corner of Lone Pine claim the ground is cumbered to a thickness of as much as fifteen feet with gravel, boulders and sand which do not permit anything to be seen of the features which are in the bed rock. So that we have in that interval from a point 14 feet northerly from T-875 to the end-line of the Lone Pine claim a gap of approximately 90 feet where there is no continuous exposure of that vein, and yet it is exposed again

(Testimony of Fred Searles, Jr.)

farther on, and the continuity which it exhibits in that direction is such that I believe there can be no reasonable doubt that it is persistent through that gap of ninety feet. At the end-line of the Long Pine a trench has been dug through this glacial drift which covers the surface of the ground, and in the bottom of that trench there was formerly exposed two streaks of quartz belonging to the Black Tail vein, one of which was about ten inches [21] thick and the other somewhat narrower. I might say that these exposures are not so good now, due to the fact that that trench was dug some time ago and has caved in to some extent, walled up, high walls in the glacial drift. From there for a distance of forty or fifty feet northerly the trench shown on the map does not go down to bed rock. It is right in the wash, although it is 5 or 6 feet deep. But when it does reach the bedrock again near Station T-843 it again exposes the Black Tail vein which is there 4 feet thick of solid banded quartz. From there down to 537, and for a distance of 20 feet—a distance of 15 feet northerly of it, there is a continuous exposure of the Black Tail vein at its apex in the trench. Throughout that distance it is a solid vein varying in width from $2\frac{1}{2}$ to 4 feet. A few feet northerly of Station 537 this trench, coming down the slope, comes to the gulch which is clearly indicated running across the southerly end of the Pine claim by the contours which run around it. Here again we have a short distance here the sand and gravel and boulders

(Testimony of Fred Searles, Jr.)

carry down in that gulch by the water have obscured the outcrop of the vein, covered it over, so that it is not traceable at the surface, and there is in fact a length there of 42 feet in which no quartz can be seen, because it is covered over with gravel that has been washed out by the stream. [22]

A. (Continuing.) From that point the quartz is plainly visible on the northerly side of the ravine, and which there has a strike of north 52 degrees west pointing exactly over to the exposure in the northerly end of a trench facing it south of the gulch and forty-two feet away. The vein can be continuously traced without any break whatever except that there is a bush growing over the outcrop, making it for a distance of about eight feet south of Station 552 invisible. Up the hill across contours 2860, 2900 and 2920 continuously along that trench through the vicinity of Station 554, throughout that distance there is a small vein of quartz continuously exposed in that trench. Near Station 554 the quartz no longer exists. The main part of the vein no longer exists at the outcrop because it has been stoped out—mining operations have taken out the vein through the area marked “Open stope” and have removed the greater portion of the vein which is absolutely continuous from there across to the side-line of the Lone Pine Claim. In fact the red area between trench 897 and Station 545 and this Station 546 are only pillars left at the surface to help keep the stope from caving in. That distance from near

(Testimony of Fred Searles, Jr.)

Station 554 to the side-line of the Lone Pine Claim represents the outcrop of the ore shoot and that ore shoot has been stoped throughout that distance so that where except for the pillars, the vein no longer exists in the ground [23] the existence of the stopes shows that that vein was absolutely continuous throughout that distance. Now, there are certain features in this ground here beside the Black Tail and Surprise vein. I have referred collectively to a large number of northeasterly striking stringers, little veins, fissures, which are shown on this exhibit by the fine red lines, lying somewhere to the north of the main Black Tail vein. Three of these little stringers or little veins cross a trench at a point which is marked on this exhibit "Discovery cut by patent notice." As that cut originally existed, there were three stringers that could be seen crossing it. Recently a trench has been constructed across the old discovery trench so marked here and two of these stringers have been found to come together so that in the transverse trench there is shown a foot of quartz, and that crosses this trench which is marked "Discovery cut by patent notice." In both directions from that trench, trenches have been dug in the surface of the ground to increase or to help out the natural exposures in showing what becomes of these little stringers that exist in the ground through that region. One of these trenches has been dug through Station T 822, T-824, T-828 and so on across to T-831 at the easterly side-line of the Lone Pine claim.

(Testimony of Fred Searles, Jr.)

The COURT.—What is the scale of this map—fifty feet to the inch? [24]

A. 40 feet, sir. That trench does not follow continuous quartz. There are three places in the trench where the stringer which was followed along it has been left, going out in each instance on the northerly side of the trench, the trench crossing over through country rock and encountering other stringers which are followed for short distances, again going into the side of the trench and crossing over again to the 37 and so on so that there are three breaks in the continuity of the tracing of quartz to the east side-line of the claim. These breaks vary from five to I think as much as 8 or 10 feet. The trenches on the other side are rather more numerous. They have been dug at different times and they follow different stringers, but one of them passing through the points marked A, B, C, D, E, 596, 885, 803 to the west side of the claim follows several stringers so that by going along that trench, through that tracing, quartz may be followed continuously from the cut to the side-line. But a trench being dug that way could have been run in many other directions also following quartz, because these stringers branch and interlace so that it would be possible for instance to start at that point and follow other stringers off in other directions and arrive at a point one or two hundred feet—at least one hundred feet from the line in which the trench was actually constructed. [25]

Mr. COLBY.—Q. Where to?

(Testimony of Fred Searles, Jr.)

A. Most anywhere. These stringers are very numerous and they branch and interlace so that by properly following them one could vary the direction of his tracing through a considerable range.

The COURT.—Q. They are of no value, however.

A. They are of no value. They vary in width from a fraction of an inch to as much as a half foot and in some cases even more, but average only two or three or four inches—absolutely insignificant features as compared with the main vein.

Mr. GRAY.—Q. By whom was that trench dug?

A. I don't think I can give the chronological order of it. Different portions of it were dug at various times I have been at the camp. I understand the work was all done by the defendant company. But some of the trenches were dug and work discontinued for a long time and then others run.

Q. It was all done since this case started?

A. Yes, sir. There is one other feature which is now expressed by cuts at the surface of the ground. That is a vein which crosses the westerly side-line of the Lone Pine Claim near Station 572. That vein is exposed in trenches 840, 839, 836 and 901. The vein is also exposed further to the southwest in these trenches by the natural exposure and by a cut which exists across the Pearl end-line in this vicinity. That vein is last exposed in the floor of trench 901 which in its more northerly end is really a sort of incline tunnel [26] because at this end it has run under the wash, the same wash

(Testimony of Fred Searles, Jr.)

which obscures the outcrop of the main Lone Pine Black Tail vein a few feet easterly along the gulch. That last exposure of the quartz in that vein there at the north end of trench 901 is about 4 inches of quartz in the bottom of the trench covered to a thickness of about 8 feet of wash. There are other exposures of quartz rather massive exposures, which, however, seem to be of limited continuity along their strike at the northerly end of the claim, particularly in trench 834 and trench 835. Little quartz veins of substantial width, in one instance as much as 12 or 15 feet, are shown for a short interval. What becomes of them on their strike I do not know. Before all this trenching was done, there might readily have been suggested to the mind of a man who was walking over this area that the Black Tail vein which enters its southerly end-line continues northerly through the limits of the claim and crossed its northerly end-line; but with the development as it stands to-day there can be no question that the Black Tail vein crossing the southerly end-line swings around and crosses the side-line near Station 542, there entering the Fraction Claim.

Q. Right there, Mr. Searles, may I ask you what point in that side-line that vein crosses.

A. For the purpose of answering that question, I will refer to the composite map, Plaintiff's Exhibit 2. On this map there are shown a working called the side-line raise at Station 277. This working is the collar of a raise [27] which was put up

(Testimony of Fred Searles, Jr.)

from the 100 level of the Pine mine. It was put up to expose the conditions in the footwall of the Black Tail vein in this section. It does not follow the surface, the main Black Tail vein. The main Black Tail vein is exposed in that raise up to a point not shown on this map but marked in the ground and tied with a transit, and which we know as the point A. This point is in the footwall of the main vein within three feet of the side-line of the Lone Pine claim and within 6 feet of the surface. The reason for not carrying the working which exposes the vein at that point through to the surface is that conditions there are such that if an additional raise was put through, there would be great danger of caving that whole area. But that point is located within 6 feet of the surface. At that point the footwall of the vein and the vein itself has a strike of north 44 degrees east and dips 70 degrees. By projecting it on the strike for 3 feet and projecting it on its dip upward for 6 feet, the point may be determined with accuracy where the footwall of the main vein crosses this side-line. That calculation has been made and the distance as determined by that opening and by the calculation is 589 feet from corner two of the Lone Pine claim. Now the raise above and to the north of the point at which the footwall of the vein is exposed shows quartz. There are two or three stringers in it—two or three small veins, veins fully as big as the vein the discovery cut, according to the patent survey, and these veins are traced continuously to the

(Testimony of Fred Searles, Jr.)

surface at a point further along the side-line. I have in my notes a sketch of that raise.

Mr. GRAY.—We will offer it in evidence. [28]

(The sketch admitted in evidence without objection and marked Plaintiff's Exhibit 8.)

Q. Is sketch No. 8 the one you refer to?

A. This sketch is marked Plaintiff's Exhibit 8. That is a section of the side of that raise, looking northeasterly. It shows the main vein coming up through the back of the raise a few feet from the side-line and disappearing into the roof of the raise. There is also a small stringer diverging from the footwall here and following up for some distance in the raise. I might say that in my opinion this stringer or any one of the three stringers exposed in that raise is so small, so insignificant in comparison to the main vein which continues up to the surface that it ought not to be considered as being in the same class of structure or commercial importance as the Black Tail vein. They are, however, as big as the stringers in the discovery cut.

Q. The distance which you gave of 589 feet is the point where the main vein passes out of the east side-line of the Pine Claim?

A. That is correct.

Q. Before you leave that surface. Are any of the croppings of that Black Tail vein observable upon the surface to-day within the Pine claim?

A. Within the Pine Claim, the croppings of the Black Tail vein are observable continuously with the one exception where it crosses the gulch and the

(Testimony of Fred Searles, Jr.)

places which are marked open, points where the vein has been removed by mining operations. [29] There is one point particularly where the vein itself this quartz and silicified rock have made a sort of bluff standing up plainly can be seen from across the gulch a long distance away.

Q. Can be seen across the gulch from what direction? A. From the Black Tail claim.

Q. Standing then from the Black Tail claim and looking across the gulch, you can observe the crop-pings, can you, of this Black Tail vein in the Pine claim? A. You can.

Q. Now you may proceed.

A. From this point 589 feet from corner two of the Lone Pine Claim, which is the point at which the footwall of the Black Tail vein crosses that east side-line, the vein is continuous into the stopes of the Last Chance mine. On Plaintiff's Exhibit 3 there is shown a section marked Section AA in the lower left-hand corner of the exhibit, which is drawn on a line, also shown as AA' passing through this point 589 feet from corner two. In this section is depicted the vein as it would show if the ground south of that line AA' were removed and one could stand and look at the clean-cut, vertical surface of a plane passed that line AA'. That tracing is beyond any question because the vein has been stoped through nearly all of the interval, the black lines showing on the exhibit representing the outline of the stopes, and in the interval in the stopes the vein

(Testimony of Fred Searles, Jr.)

exists as a strong, persistent fissure filled with quartz and calcite.

The COURT.—Q. What portion of that vein is indicated on the other map you had?

A. What portion of the vein? [30]

Q. Yes, as indicated on the surface of the map?

A. That is a section drawn through this point at which the line of the Black Tail vein crosses the east line of the Lone Pine claim in the direction of the end-line of the claim. I think it becomes a matter of interest to inquire as to the direction of the downward course along this section AA' with reference to the strike of the vein in the Lone Pine claim. There is shown on this map Plaintiff's Exhibit 3, the number 2 or 200 foot level of the Pine mine and there is also shown a black line marked average course of the Black Tail vein in the Lone Pine claim, which is a line joining the exposures of the vein on this level where it crosses the east side-line and where it crosses the south end-line of the Lone Pine mine. There is also shown through one extremity of that line a line parallel to the end-line of the Lone Pine claim and marked here "Direction of extralateral right." The line marked "Average course of the Black Tail vein in Lone Pine claim" represents the average course because the vein being curved has many local strikes. Observations for strike taken at various points on the curve of the vein would give different results and the only result that can be had for its average course is a line showing the extremities of the exposure on the

(Testimony of Fred Searles, Jr.)

same horizontal plane within the claim. [31]

That being then the average course or strike of the vein within the Lone Pine Claim, a line drawn at right angles to it is the dip or direction of dip. The angle between the dip and the end-line or direction of extralateral rights of the Lone Pine Claim is 23 degrees.

There is also shown on this map, Plaintiff's Exhibit 3, the 500 level of the Last Chance and the 600 level; the 500 level being the longest level driven within the Last Chance Claim. There is shown immediately above that level a line marked "Average Course of Black Tail Vein in the Last Chance Claim," which is a line parallel with the exposure of that vein continuously from one end of that drift to the other. That drift represents as nearly as we may know the average strike of the vein within the Last Chance Claim and the line at right angles to it represents the dip. The direction of the end-line or the direction of extralateral right makes an angle with that direction of 37 degrees.

Q. So that whether you take the course of the vein in the Lone Pine claim or the course of the vein in the Last Chance claim between the planes of the end-line and one parallel thereto on the Pine claim, you are following more upon its downward than upon its onward course.

A. That is true; the direction of the extralateral right is more nearly on the dip of the vein than on its strike.

In reference to these sections A-A I will have

(Testimony of Fred Searles, Jr.)

that line placed on the composite map so that it will be at once evident as to the workings which that section cuts, but I will say that the vein is exposed almost continuously [32] by drifting on the line on that section, so I think there is no doubt whatever as to its continuity from the point which it crosses the side-line into the Last Chance stope and as far down as the 650, the deepest level of the Last Chance mine.

Now, the structural features exhibited by the underground workings on these properties are shown, I think correctly on the composite map, Plaintiff's Exhibit No. 2. I do not think it is necessary or desirable to discuss in detail all of the vein exposures and other structural features shown on these workings but I anticipate that there are certain areas where they become of particular interest and importance, and I have thought that one of such areas would be in the vicinity of the bend in the vein where the Black Tail vein entering with the northwest strike curves round and takes the northeast strike. One reason is that it is near that area where the gulch crosses the vein and there is a gap in which it is not exposed. For those reasons I have prepared a map of a portion of the 200 level of the Pine from its most southerly end to the beginning of the stroped ore body, showing the features that are exposed by that working in more detail than can be shown on a 40 scale map.

This map is marked Plaintiff's Exhibit No. 4 and entitled "A Detailed Sketch of a Portion of

(Testimony of Fred Searles, Jr.)

Pine No. 2 Tunnel," made on a scale of 10 feet to the inch. The original mouth of this tunnel was toward the lower left-hand corner of the map not far to the west of Station 340A. That tunnel ran through the country rock and was in the footwall of the vein. The ore chute which is mined for [33] some distance to the north and east exists through Stations 327 and 326 on this map; as is the case where most of the stopes are, one cannot see all of the vein because a great deal of it has been removed, but there is sufficient shown in the pillars in that vicinity to make it certain that throughout here was a vein having a width of 8 or 10 feet.

The COURT.—That is at an angle, you say, where the vein turns off.

A. That is at the point where the vein begins to swing around. Above this level this same swing may be seen in the stope itself where it comes up to the surface, standing at that open pit shown on the surface map near Station 544, but standing at the other end of that open stope the stope itself may be seen to swing around, so that even within the ore shoot where it is stoped an angular change in the strike of 20 degrees is plainly evidenced in that stope. And the quartz in the face of it has a strike of only a few degrees to the east of north instead of a strike north 45 east. The end of the stoping is along the line 544 and worked from there continuously to the northeast in the Last Chance ground.

(Testimony of Fred Searles, Jr.)

The COURT.—There is no work on the ground then southerly from that point?

A. There is quite a lot of work. The only stoping is over in the Black Tail claim in the vicinity of this Black Tail winze or shaft. From that ore body to the ore body in the Lone Pine Fraction claim there is no ore body of commercial ore developed.

The COURT.—It is now twelve o'clock; we will adjourn until two o'clock.

Thereupon an adjournment was taken until 2:00 P. M. of this day, Monday, August 23d. [34]

2 o'clock P. M. Monday, August 23, 1920.

Mr. GRAY.—Have you now the enlargement of the photograph which was presented as Plaintiff's Exhibit 7 this morning, Mr. Searles? A. I have.

Q. Will you let me have that marked, please?

(Photograph marked Plaintiff's Exhibit 7 for identification.)

A. This is an enlargement of the same photograph. The scale of this photograph, I neglected to state this morning, is given by the jack-knife which is inserted in the cleft of the rock. It shows more clearly than the small photograph the swing around of the banded quartz vein from the fissure running around in one direction to a fissure that makes an angle of about 90 degrees with it, the final result being a continuous quartz vein around that curve.

Q. The banding is observable there, which is

(Testimony of Fred Searles, Jr.)

shown in this enlarged photograph going around that curve.

A. Very clearly observable in the roof of the drift.

Q. Is such a condition common to this particular district and this particular mine, or is it one with which you are familiar in other districts?

A. It is a quite common phenomenon. One reason why I feel a degree of confidence in assuring the Court of the method of formation of this vein is that I have seen an entirely similar phenomenon in the formation of other veins in other camps. Particularly is this true in the gold quartz veins of Grass Valley in California, in which camp I was [35] brought up and worked as a boy in the mines. Those quartz veins, although they are in a camp which was, I believe, almost the cradle of our American extralateral right law, are not continuous planes. Many of the mines, and I think particularly of the Pennsylvania mine and of the North Star mine, with both of which I am quite familiar—in both of those mines the veins are formed in just this sort of way. They follow fissures for a distance until the fissure which they are following intersects another fissure, swing off onto the other fissure, leading off from the fissure which they were following, going on diverging from the side of the drift or from the back of the raise as a wall, but the quartz and valuable ore swinging on, on to a new course either in dip or strike. That is a phenomenon which is thoroughly recognized

(Testimony of Fred Searles, Jr.)

in that camp, and it is the result of the accommodation of a vein to a system of intersecting pre-mineral walls. No one thinks there that when the vein swings over from one wall to another that it has faulted, or anything like that; it is simply a curve in the vein referable to just this sort of condition. Nor, of course, is a curve, even as much as 90 degrees in a vein, anything that is extraordinary. The biggest and most important gold vein in the United States—meaning the Goldfield Consolidated vein,—had two angles or curves in it greater than 90 degrees. I was very familiar with that vein.

Q. Does the miner or the geologist consider that those constitute separate veins in separate pre-mineral fissures, or does he consider it as one continuous vein as long as he follows that banded quartz? [36]

A. The miner certainly considers it as one vein, because the quartz is the thing that he follows. The geologist might have different ideas as to the genesis of it, but I think the continuity of the quartz and the quartz structure is the thing that determines the identity and continuity of the veins, rather than a change in direction.

Q. Now, if you will just proceed, Mr. Searles; I think you were discussing the 10-foot map. And before you go any further could you indicate upon Exhibit No. 2, which is the area which is covered by this 10-foot detail map.

A. I will do so. The detail map, Plaintiff's Ex-

(Testimony of Fred Searles, Jr.)

hibit 4, is an enlargement of the portion of the second level of the Pine, which I will now include or embrace with a black line marked "S." It also shows one working on a different level, being the winze level, some 30 feet below the No. 2 level. It will be observed that this area covers the portion of the vein which swings around from the northeasterly to the northwesterly strike. As I started to say this morning, that vein is shown by the red color in the vicinity of Station 327 and 326, where it has been stoped and shipped as commercial ore. The end of the stope is in the vicinity of 326. There is a considerable interval to the south intervening between this stope and the next stope on the vein. The quartz is shown in red and the blue lines on the map indicate gouge fissures in the rock. One such is shown on the footwall on the vein at 327 passing along the foot to 326 and there diverging from the vein, and shown again crossing the crosscut immediately west of 328. It is also shown crossing very obliquely a tunnel farther south near its mouth. [37] Another fissure is seen in the little drift at 320B. Here a wall with the strike about N. 45° W. is indicated and a dip of about 70 to 75° in a vein which is shown throughout the extent of that drift a distance of about 12 feet. That is the only exposure of that vein that I know of. The main vein immediately south of 326 in part runs into the wall of the crosscut there. On the side of that wall may be seen a thickness of 6 feet of quartz running into the wall. Some of that

(Testimony of Fred Searles, Jr.)

quartz has died out by the time the vein reaches the crosscut west of 320A, for in that crosscut there is only about a foot and a half of quartz under a *gogue* wall. The interval in the drift for about 10 feet each side of Station 330 contains a relatively small amount of quartz, the major portion of the vein at that part being in the wall of the drift; but immediately south of 330—say 5 feet to the south to the main wall—the vein again enters the drift and is followed continuously a good thickness south through Station 331. At Station 331 the workmen ran into gravel. The interval just southeasterly of 331 is the interval immediately under the gulch and the gravel was deeper than was anticipated when this working was initiated; and in that interval, on the left-hand side of the drift gravel comes into the workings, but another branch of the drift has been extended down south from near Station 331, and that shows the vein continuing. It also shows a branching of the vein, for at that Station which I see no number on here but which I will mark 331 $\frac{1}{2}$, a wall of the vein carrying a thin seam of *gogue* enters [38] the wall of the drift and continues in a southerly or slightly southwesterly direction. Behind that wall there is a little quartz, I should think at least a foot. But branching from that wall around curving to the right is—

Q. Curving which way?

A. Curving to the left—curving to the southeasterly, is a band of quartz also about a foot and a half wide which is followed for a distance of five

(Testimony of Fred Searles, Jr.)

or six feet in the wall of the drift. At that point a minute *gogue* seam breaks it and there is an interval right there near the first set of timbers in that working 6 inches long where that strand is broken and there is discontinuity at that extent at that point. I might explain that the red lines on the map shown on this southerly extension of the drift south from 331½, and in fact throughout the map, are plotted on that projection on the floor of the drift, because in a detail map of this kind a certain horizon has to be taken for showing the horizontal section. Of course, when one looks at the floor of the drift one does not see quartz—he sees track and dirt, and the point at which the quartz is observed is in the side of the drift; but it is projected to the floor because it is impossible to show it on the side on a plan map, so that the exposures which are indicated southerly from 331½ will not be seen on the floor of the drift as depicted, but will be seen on the side of the drift and projected on their dip to the floor. [39]

Q. Before you go on, this is the usual, ordinary method of mapping.

A. The customary method in all geological mapping?

Q. Go ahead.

A. From that little break of 6 inches the quartz is continuous in the drift immediately underneath the gravel or wash which overlies it, and that quartz there has a strike which I took with great care of north 28 degrees west. It will be seen that the drift does not have that course. The drift runs more

(Testimony of Fred Searles, Jr.)

southerly and therefore cuts diagonally through the quartz which looking at the side of the drift here is exposed higher and higher along the drift as one goes southerly, so that near the southerly end of the drift the major portion of that quartz is not exposed in the side any longer, but is exposed up in the back over the timbers, and in that back there is one strand of quartz which has a thickness of over 2 feet, and in fact in the set third from the end there is almost solid quartz for more than half the width of the back of the drift, fully three feet and a half, with some little stringers of silicified rock between them. The extreme face of the drift has been turned around to the right and exposes another band of quartz which is seen in the face itself coming in from the footwall side and crossing the drift. And at that point there is also a stringer having a width of about 3 inches which intersects the stringer which is crossing with a northwesterly strike. That stringer has a northeasterly or southwesterly strike, but has almost died out in the face of the drift. So that I would like to be very positive in stating that the vein exposure in the drift southerly of [40] 331½ has a direction a strike to the southeast, northwest and southeast, lining up and pointing toward the vein exposed at the head of the gulch winze. There is, however, quartz diverging from the drift with a southerly or slightly southwesterly strike at Station 331½. The appearance at that point is that of a branching in the vein, and while no vein structure is exposed diverging from this drift in the little irregular holes that are

(Testimony of Fred Searles, Jr.)

shown between the first and second set of timbers and in the face there is quartz and vein matter diverging from the drift at Station 331½.

The COURT.—Where did you say that is on the other map—on the brown map?

A. It would be at the point marked 331½ in black pencil.

Mr. GRAY.—Just about east of Station 552.

A. East of Station 552.

The COURT.—I do not ask counsel for the defense to disclose their defense any further than disclose by the pleadings, but how far are the parties apart and where is the direct issue between them?

Mr. COLBY.—The main issue, right in this area here.

The COURT.—If you will pass to the other map, I will understand the situation better.

Mr. COLBY.—This is a large, bold vein coming across here and the stopes and the large character of the vein and everything terminate along a plane generally that passes in this direction.

The COURT.—At about what point?

Mr. COLBY.—Along about where I hold my pencil—that line. It is shown on this composite map perhaps better, [41] because the stoping has taken place along like that. The stoping comes up to that point. Now, beyond that point is where we differ. There is a showing of quartz coming around on this fault in here which is broken up because of the many faults that go through it, and the great question is whether that vein turns and goes in this

(Testimony of Fred Searles, Jr.)

direction as the plaintiff contends, or whether it is the continuation of it across through these trenches here where this vein is exposed, ending toward this place Mr. Searles has just been talking about.

The COURT.—Yes. Now, where is that on the other map?

Mr. COLBY.—Right here. If your Honor notices these series of cuts here disclose a vein that has a trend in this direction. Now, you are coming down along here, if you can see, by these contours here, so that on this same level you would strike this vein in here somewhere and that level would continue right on, more in this direction.

The COURT.—I think I see what the point is now.

Mr. GRAY.—In other words, we claim that the vein turned.

Mr. COLBY.—Bent around at right angles, and we claim it goes on.

Mr. GRAY.—Or faulted.

Mr. COLBY.—It is faulted and goes on.

The COURT.—You may proceed.

A. I might in further response to your Honor's question, at this Station 331½ is the point that I will so mark on the composite map and the relation between the direction of the quartz departing from that point in the continuation of the direction to the vein to the north of that would head in a general way for the vein exposure in trenches 840, 839 and [42] 838, but that in detail the vein as exposed in those trenches heads not straight for that point but for a point right in the gulch. In other words, whereas

(Testimony of Fred Searles, Jr.)

the quartz in the face of that drift and in the face of the drift at the winze are headed directly for each other and distant and apart only 40 feet, the exposure of quartz departing from the side of that drift and the exposure of vein in the trenches are apart 100 feet and not headed directly toward each other.

Now, unfortunately we are unable to make a tracing of this vein continuously on this level any further in a southeasterly direction because the gravel of the gulch coming down across there has taken the vein away at that horizon, but another tunnel has been run a little farther south intersecting the vein on the other side of the gulch, and we have exposed in that tunnel at the winze marked Gulch winze and in the drift running to the northwest from it for a distance of 12 feet a vein of banded quartz having a thickness of from 2 to 4 feet, beautifully banded, containing gold and with a structure which is unmistakably pointed toward the other exposure in the face of drift south of 331½. Now, between those two points we are not entirely without some exposure of the vein. A winze was sunk near the Gulch winze which goes down on the dip of this Black Tail vein from this tunnel and some work was done down there drifting on the fissure and the vein in a northerly direction. That worked caved in and it has left an opening or hole in the bottom of the drift on the No. 2 tunnel level at Station 338, so that if you [43] do not mind taking the risk you can climb over the tracks there and get down into that

(Testimony of Fred Searles, Jr.)

hole and there is exposed in that hole at an elevation of 6 feet below the top of the drift a foot and a half of quartz which has a northwest strike and which projected up on its dip would line up for the continuation of this vein in its direction.

Q. Now, that showing at the cave opening is not projected up to the level of the drift which passes through Station 331, is it?

A. It is shown where it can be seen in the mine at a level 6 feet below.

Q. Projected upward to the level of that drift, where would it be?

A. It would be approximately in line with the strike of the vein going northwesterly from Station 340.

Q. Go ahead.

A. Also in the drift running southeasterly from Station 334 a small winze, a kind of a dog hole has been dug in the sand and gravel there for the purpose of exposing the bedrock underneath it, at an elevation slightly below this tunnel level. I had that work done myself because I thought that this quartz which lies immediately on this surface over here might be sufficiently resistant and hard so that it would protect the old surface and by sinking down to it there find some of that quartz lying right on top of it under the gravel and that proved to be the case. That winze was sunk 6 feet there, and I happened to be in it when I encountered the bedrock and lying immediately on top of that bedrock was just a scab of white quartz. Afterwards [44] a round was

(Testimony of Fred Searles, Jr.)

shot on that exposure of the rock there and that quartz proved to be just a scab lying on the surface, and the present face of the winze shows some quartz and some silicified country rock which underlay the first exposure of quartz which I saw there. That exposure which can be seen to-day is a vein 6 inches wide of quartz and some smaller stringers, which vein has a strike of north 18 degrees west. It is unquestionably, I think, a portion of the Black Tail vein which before this erosion took place continued across between the Gulch winze and the southerly end of the drift.

Q. Where did that lie, on the foot or hanging wall?

A. The winze was sunk vertically through the sand and going down that winze there was exposed a smooth surface, an erosional surface created by the sand washing down the gulch and that quartz lay right on top, formed the surface in part, and the present exposure in the winze is the result of having shot one hole or two holes to further show up that material.

Q. Is the quartz in that sand winze shown in the exact position that it is disclosed there or is it projected to the level of those drifts?

A. It is shown where it is disclosed at the level about six feet below the tunnel.

Q. Projected upward to the level of the drifts, where would it be?

A. Projected upward on its dip it would be some 5 or 6 feet southwesterly of its position in line with

(Testimony of Fred Searles, Jr.)

the Black Tail vein. So that with those exposures only the longest gap in the tracing at approximately this level of this Black [45] Tail vein across the gulch is the distance between those two winzes, both of which expose portions of the vein, and that distance is 18 feet.

Q. Is there any doubt in your mind that the vein is continuous through there, Mr. Searles?

A. I think there is no question whatsoever. Now, I might say that an attempt has been made to disclose this vein across that interval without any interruption by sinking to a level below the gulch and the winze was accordingly sunk at a point marked Gulch winze going down on the dip of the vein for a distance of about 30 feet. That winze follows the vein to the bottom, but the quartz in that winze pinches out immediately below the floor of the drift and from there down to the bottom of the winze there is practically no quartz observable. We have the walls, a hanging wall which exists overlying that drift, continues down, and the fissure is there, and attrition products but there is no quartz in that winze. A drift was run from the bottom of that winze northerly through Station 349 and for a distance North of that which I don't know. At the present time that drift is open only where shown immediately North from Station 349. Beyond that it is caved in. [46] After it caved a hanging-wall lateral was run through Station 350 around in the wall of the rock and at the point marked with a little cross hatch another attempt was made to cross into

(Testimony of Fred Searles, Jr.)

the fissure, which there is very heavy ground. That apparently caved in, too. All you can see there now is the caved material running out into the end of the crosscut. In that material is a lot of sand and gravel.

Q. Well, now, is that surface sand and gravel?

A. That is sand and gravel out of this gulch. And that is exposed again in the very face of this work, the most northerly face and I will say that I don't think I have ever seen just a similar condition, a fissure going down forty feet below the surface of the ground containing sand and gravel carried in by that gulch. Now, there is only one explanation for it, and that is that this vein which we have here, and which has been followed down the winze throughout that interval, consisted largely of soft material, just as it does in the winze, gouge and crushed rock, and the stream coming down here has been able, with the boulders and sand which it carried, to wash out of that fissure a good deal of the attrition products which it carried, and the result has been that a pothole has been formed there right along the face of the fissure. Now, I don't know the limits of that pothole,—whether the limits of that pothole which has been filled with sand and gravel are exactly the walls of the vein, because I have never been into it to see, but I am confident that the line of it as shown by this sign for gravel along here is approximately the trace of [47] that vein before it was literally gouged out of there by the action of water working into the soft material. I think it is a very unusual

(Testimony of Fred Searles, Jr.)

situation. But the vein continues across there and by sinking still further and getting underneath that sand finally it could be developed across that interval. There isn't any question about it. So much for that.

Q. Just one place you have not discussed. Did you describe what is shown in the working that passes through Station 334?

A. For a distance southeasterly from Station 331 there is country rock exposed on the hanging-wall side. That is to say on the northeast side of that drift, so that for some distance along there the appearance, at Station 334 for instance, is of a wall, on the northeast of which is country rock and south of which is gravel. So that we have there a place where the fissure is marked in part by gravel which has filled it. Just how far that country rock proceeds along there I do not know, because it is closely timbered up and for a distance between these two winzes it has caved in, and you cannot get in there at all. There is another interval in which this Black Tail vein is not thoroughly developed. I mentioned that this morning. And it lies at the southerly end of the Lone Pine claim. As stated this morning, from the collar of that winze at the surface or gulch winze I referred to, the Black Tail vein is traceable southerly up the trench through T-843 as a plain, strong vein two and a half to four feet wide of banded quartz. That is traced continuously [48] in that trench up to a little dotted line showing the entrance of what is here described as the end-line

(Testimony of Fred Searles, Jr.)

tunnel. From that point it is no longer observable, or was no longer observable before that tunnel was run at the surface, because the trench above that did not go through the wash. The wash and glacial material was so deep there that it would be difficult to dig a trench deep enough to show the bedrock. And there was up to the time this tunnel was run an interval between that place and the end-line in which the croppings of the vein were not exposed. And that interval immediately joining an interval between the shaft T-882 and the end-line where, as I mentioned this morning, the glacial drift is very deep on that end of the Black Tail claim. So a tunnel was run to try to show that condition where it crossed the line, and that tunnel exists as a deep surface cut at its mouth, and the vein is traceable through that cut for a distance along this strike of 35 feet as a plain, strong vein. At that point, which is 25 feet northerly from the end of the line the vein is faulted. There is another little transverse fault just like those that displace the vein near the open stope further down on the Black Tail claim which cuts that vein and displaces it. And there is an interval in the tunnel there where no quartz is exposed. That interval is very short, five or six feet, and then quartz comes in again on the westerly or foot wall side of the drift quartz to a thickness of eight or nine inches and possibly [49] ten inches, banded. And the tunnel as driven is not exactly on the strike of that quartz. The tunnel was driven on contract, I guess, and hurriedly, and it

(Testimony of Fred Searles, Jr.)

ran through that vein, and the vein is exposed in part, diverging into the hanging-wall side within a few feet of the end-line. Then a round was shot in the roof or back of the drift at that point so that right at the end-line the face of that tunnel is eight or nine feet high. Further around was shot also on the footwall side. And the purpose of that was to show up all of the vein which existed at that point, and the result has been to show at that point an unusually weak condition of the Black Tail vein. It exists in that particular section as a number of small stringers, none of them more than three inches thick, most of them less than an inch thick.

The COURT.—Right down towards the southern extremity? [50]

A. Right at the end-line. Not near the southern extremity of the Black Tail vein, however.

The COURT.—Q. I meant the southern extremity of that claim.

A. Of this claim; yes, sir. I do not believe that the entire thickness of the Black Tail vein is shown in the section at the face of this tunnel for the reason that, as may be seen by a rather careful examination of this map, that tunnel lies five feet easterly of Trench T-842, in which quartz is exposed at the surface underneath the wash crossing the end-line, and that quartz being approximately at the same elevation as that tunnel would still lie in the footwall side of it. So that I think one reason for the rather weak appearance of the vein there is that not all of it is exposed at the tunnel.

(Testimony of Fred Searles, Jr.)

There is probably some more underneath. The exposure which does exist there is a number of small stringers. There were seven exposed originally and additional work exposed four or five more, so there is about a dozen or thirteen small stringers of quartz through silicified country rock. Also in the tunnel at a lower elevation on the same level as the Pine No. 2 level in drifting southerly in that we find it weakening to a considerable extent. That is indicated in this 10-foot detail. That vein in the vicinity of Station 340 is fully 4 feet thick, but at the last station exposed on this level, near Station 342 it is only 10 inches thick, and beyond that point the vein is not exposed at all in the tunnel. [51] The tunnel has been run in one wall or other of the vein. What probably has happened there is that the vein which is seen at Station 342 as a thin quartz vein, ten inches thick, diverging into the wall of the drift, is cut off by the fault indicated by the blue line 17 feet southerly from 342 and is probably displaced across the drift by one of these faults so that I think the end of this drift is in the hanging-wall of the vein and the vein lies out here. It has never been developed. I am not sure about it; but I am sure that somewhere in this immediate vicinity there is a strong vein across that end-line because at that same level approximately and southerly from it from the end-line, only 150 feet *feet*, that vein is developed in the Black Tail tunnel and it is there a strong, important vein.

(Testimony of Fred Searles, Jr.)

Q. Before you proceed, you spoke of these two little faults. Do you identify that vein on the two sides of that fault? A. I do.

Q. It is the same vein?

A. I think there is no question about it with the exception I am not certain that the entire vein is exposed in that surface of the tunnel.

Q. What is the fact with reference to veins, gold veins, quartz veins, with which you are familiar weakening in places and being strong in other places; having ore in one place and not commercial ore in another?

A. Well, of course, it is a well-known fact and recognized by miners as well as by geologists that the tenor of the content of veins of any sort of metal is not constant throughout the length of the vein; they have lean places and rich places [52] and some veins have good proportions of ore in them and other veins have small proportions of ore in them. The veins at Republic, at least in this vicinity are rather lean; the percentage of stopable ground is not very great.

Q. You may proceed.

A. I took a photograph of the exposure of the Black Tail vein in the edge of the drift immediately north of Station 2318 in the Black Tail Tunnel level just to show what the vein looked like in that area. I have that photograph here.

Mr. GRAY.—Mark it Exhibit nine.

(Photograph admitted in evidence without objection and marked Plaintiff's Exhibit 9.)

(Testimony of Fred Searles, Jr.)

A. That is a picture of the face of that drift immediately north of 2318 as though you were looking at the face of the drift. The small pick there gives the scale of it and one can see the approximate width of the quartz, together with the fact that the quartz does not all lie in one strand, but there are horses, small horses of country rock between them. That country rock looks black, but it is almost as much quartz as the white quartz, because it has been almost entirely practically silicified. There are also small stringers in the rock underneath the vein which can be seen by the photograph. The vein there is fully $3\frac{1}{2}$ or 4 feet thick. I might say that the reason for not taking this photograph at Station 231, which was a little closer to the end-line, is that there the vein runs diagonally through the drift, or rather the drift runs diagonally through the vein. So that the exposure on this side is a diagonal section of it, instead of a section like [53] that in the face of the drift. I don't think it is necessary to discuss in detail the structure of the other parts of the mine. I do not know of any reason for doing so. I have examined the structure as indicated on this map and can subscribe to it generally.

Q. May I ask you whether or not you found a vein which you have called the Black Tail vein passing into the south end-line of the Pine claim or the Lone Pine claim and which passes for some distance on its strike through that claim, departing through the east side-line?

(Testimony of Fred Searles, Jr.)

A. That is a fact, and with the exceptions noted, I have traced it and can trace that except in the places where it is covered up; it is absolutely continuous structure and can be traced as indicated in the question.

Q. And dipping beneath the surface of the Last Chance claim?

A. It does dip beneath the surface of the Last Chance.

Q. May I direct your attention specifically to one point, and that is on the No. 2 level. Do you find the banding and the quartz changing its strike from northeast to northwest on the No. 2 Tunnel level?

A. I do; that is the condition.

Mr. GRAY.—That is all.

Cross-examination.

(By Mr. COLBY.)

Q. Mr. Searles, you spoke about the formation of fractures in rocks resulting from compressive stresses, and that these fractures often formed at a wide angle, that is an angle [54] approaching 45 degrees, as I understand you.

A. I did not intend to convey that impression.

Q. Is that not a fact, that in homogenous rock the angle of fracture is generally 45 degrees?

A. The angle between the two systems of fracturing?

Q. Yes. A. I do not think so.

Q. You don't think that as a result of scientific tests on homogenous rock that they get fractures

(Testimony of Fred Searles, Jr.)

which are at right angles to each other as a result of compressive stress?

A. Fractures which are at right angles to each other? You said 45 degrees.

Q. I meant ninety degrees. That was my mistake.

A. Yes. That angle varies according to several things. Work on that subject has been carried out to some extent by Daubrea.

Q. Leith has done something on it also, hasn't he? A. Yes.

Q. Knowing that is true, would you not ordinarily expect to find veins that are formed along fractures that are the result of compressive stress turning at right angles?

A. Well, that is not true, because as shown in this photograph, we do not ordinarily under these conditions have a vein coming up to a sharp point and then turning off at an angle. You have rather the vein curving around in the vicinity of the line at which these two fissures come together, and then more generally taking up the direction of the other fissure.

Q. Is that true of the Grass Valley veins that you were speaking about? [55]

A. We have in the Grass Valley some angles that are very sharp and some that are a good deal more oblique.

Q. Referring to these Grass Valley veins and particularly to the Pennsylvania that you cited as an example that had some marks of resemblance

(Testimony of Fred Searles, Jr.)

at least to the situation that you found here, does not that Pennsylvania vein continue as a general vein striking with a general strike throughout the country?

A. To the best of my recollection, there are numerous places in the Pennsylvania Mine, notably in some of the ore shoots, where the vein is continuous in one direction for as much as four or five hundred feet, and then down to the intersection of another wall, and in that mine the intersection is not at an angle of 90 degrees; it is somewhat more oblique. The vein turns off on that wall and persists for a long distance, perhaps as great, and then turns back in course more nearly approaching that which it had at first; so that by taking points at great distances apart, one can get an average strike on the vein, as one can on any crooked vein.

Q. In other words, that vein does not turn as a whole at right angles, but keeps on its general course zigzagging as it goes?

A. A distance of 1000 feet might be had on that vein which would show a very substantial angle approaching a right angle, between two directions on the vein, but if one takes the vein from one end to the other it cannot be said that half of it is in one direction and half of it in another continuously as is more nearly the case here.

Q. Now, isn't it a fact, Mr. Searles, that when these fractures are formed by compressive stress and cross each other that you find that fractures

(Testimony of Fred Searles, Jr.)

continue on beyond the points of [56] intersection in both directions?

A. Not ordinarily in both directions; more commonly in one direction. I would not say they never crossed each other.

Q. Don't you frequently find an extension of the fracture beyond the point where it crosses the other fracture and comes up to the other fracture?

A. You infrequently find it. It is much more frequent to find the reverse, one of the fractures stops at the other.

Q. Now, we have in this country, I believe you have testified to the Surprise vein, and in order that the Court may keep this in mind, we have an extension of the Surprise vein at 201. That is true, is it not? A. Yes, sir.

Q. And then again at 192, 193, 194, 195 and so on?

A. Referring to Plaintiff's Exhibit 2; yes, sir.

Q. That vein extends through that country in that general direction, that is a little northwest and southeast, isn't it? The map is oriented, in other words, so that the side-lines of the map are due north?

A. The vertical border of the map is north.

Q. So that the Surprise vein has a general course through the country of northwest and southeast?

A. Yes. That is the predominant direction of fissures in the Republic Camp.

Q. About how many feet can that vein be traced to your knowledge?

(Testimony of Fred Searles, Jr.)

A. I have traced it 2,000 feet, I should think.

Q. And it passes right off parallel for a distance to the Black Tail vein and continues on beyond this right angle [57] turn that is taken by the Black Tail according to your idea, on its strike?

A. I don't subscribe to the right angle turn in the Black Tail vein.

Q. That is immaterial, whatever angle you give it. It is very nearly a right angle.

A. The Surprise vein throughout the length where it is developed in the Pearl and Surprise mine has a course which is persistent throughout.

Q. And it did not surprise you of course, that that Black Tail vein coming in the same direction, should not be persistent or the Black Tail vein should not keep on parallel to the Surprise?

A. You ask me if it surprised me?

Q. It surprised you to find a right angle turn in the Black Tail instead of its keeping in a general parallel course to the Surprise?

A. I think I may say it did. I think I may say, in following it for a long distance in this north-westerly course—for instance, if I had been locating its extension, I would have located it onward in that direction.

The COURT.—How far are these two veins apart?

A. They are not exactly parallel but in the vicinity of the Black Tail tunnel are 320 feet apart.

Q. And how far apart would that be, assuming that the Black Tail crosses into the Lone Pine in

(Testimony of Fred Searles, Jr.)

the vicinity of the gulch winze that is projected to the Surprise, through which you would expect to find it if it continues on its course? [58]

A. The Black Tail and Surprise veins in the section of the gulch winze are about 160 feet apart.

Q. Now, this photograph that you have taken and the enlargement of which has been introduced as well as the original, came from what mine?

A. Came from the San Poil mine which adjoins, lies somewhere to the west of this property.

Q. And some considerable distance away across Eureka Gulch?

A. Yes, 2,000 feet, I should think.

Q. Did you get any photograph like that in the ground in dispute here?

A. I didn't get any photographs, but I have a number of sketches of the identical thing such as that. I took a photograph of that because of course, it isn't often that you find an exposure which is just right to photograph, but the absolutely identical situation is shown in very numerous places in the Lone Pine claim where these little veinlets curve round from one course to another.

Q. Isn't it quite common for veins to undulate and turn so that you can get a photograph of that sort in a vein that is not turning at all on its general site; in other words, can't you in many mines find a local curve of that sort where the main vein keeps on straight?

A. Many veins have local curves in them but you will see in this particular vein no limit of it.

(Testimony of Fred Searles, Jr.)

Q. How much of the vein is included in that photograph?

A. I should say roughly by this scale, not to exceed 5 feet. [59]

Q. You know we have here various levels, 1, 2, 3, 4, 5 and 6. And I suppose the vein as shown on these levels within the Lone Pine claim, according to your theory, turns on each of these levels and extends into the Black Tail country?

A. I think the vein can be developed around the turn on any level, yes.

Q. That has not been done though.

A. That has not been done.

Q. And as a miner came up, mining on his ore, he stops at this termination?

A. He stops when he reaches the limits of his ore.

Q. So that you haven't any exposure or any turns in the ends of this discovery which correspond with this photograph which you have taken in the San Poil mine?

A. I have an exposure which corresponds to that photograph in the sense that there are turns exposed in these levels. For instance on 3 level, in Crosscut 343, there are two quartz veins one of which is about 14 inches thick and the other a little thicker which have a northwest and southeast course and which come right around into the Black Tail vein and the structure of that quartz swings right around that angle.

Q. What is the strike of that turn at 325?

(Testimony of Fred Searles, Jr.)

A. The strike of this is given by the direction of the drift and is—the strike of the vein for the distance expressed in 3431 is east and west.

Q. How many degrees does that differ from the general strike of the Black Tail vein?

A. About 40 degrees.

Q. In order that the Court may understand, the strike [60] of this turn that you say is another turn of the Black Tail vein runs off in another direction—

A. I didn't say that.

Q. Excuse me, isn't that the Black Tail continuously in there?

A. That is a branch of it.

Q. Isn't that the strike of that particular portion—you say that is a branch of the Black Tail?

A. Yes.

Q. How does that compare with the Black Tail itself, the general strike?

A. It follows it, about 20 degrees.

Q. About half a right angle?

A. Yes.

Q. If you will take the strike also of this little vein in here that shows just to the east of point 127 and give me the strike of that.

A. There are several veins there.

Q. This one turns off approximately at right angles.

A. Right angles to what?

Q. The main drift.

A. There is a vein on the second level—on the first level of the Pine near Station 243 which has a course of north 20 degrees west.

Q. And the main vein, what you call the Black Tail, passes right on to the southwest of that vein,

(Testimony of Fred Searles, Jr.)

doesn't turn and follow the course of that vein to the southeast?

A. No, but that branch vein can be seen both in the drift and in the stope on that vein to swing around most beautifully from this course of north-west around into the main Black Tail vein so that if one lies on the footwall [61] of the stope right up where these two veins come together you can extend one arm in the direction of this branch and one arm in the direction of the main vein and the quartz comes right around that turn and swings in and becomes parallel with the quartz structure of the main vein. It is quite an astonishing bend there.

Q. What do the miners call that vein here that is labeled 100, 200, 300, 400, 500 and 600 foot level?

A. I haven't the slightest idea.

Q. You haven't asked them or heard them say anything about it?

A. I don't think I have ever talked about it to the miners.

Q. Have you read any of the literature on the subject?

A. I have read some reports dealing with this area, yes, sir.

Q. Have you seen any maps, any old maps, say prior to 3 or 4 years ago with the vein labeled on maps?

A. I have seen some old maps but I don't remember about the labeling.

Q. Have you read any reports of this vein, that

(Testimony of Fred Searles, Jr.)

are more than 2 or 3 years old?

A. I have already stated that I have read some literature.

Q. I don't mean published reports. A. No.

Q. Let me understand you. You have never heard this big vein, leaving out this small portion that you have tried to carry across the end-line, you have never heard that called the Lone Pine No. 2 vein?

A. I have never heard any portion of that vein called the Lone Pine No. 2 vein but I have seen it so described in [62] print.

Q. Have you ever seen it described as the Black Tail vein, that portion of it?

A. Have I ever seen it described?

Q. Yes.

A. I have seen it on the ground as a portion of the Black Tail.

Q. That is not what I asked of you.

A. I don't know what you mean.

Mr. GRAY.—I think I shall object to that. I don't think that what someone else may have called it, particularly the manager of their mine, has anything to do with it.

Mr. COLBY.—The point I wish to bring out is the fact that this vein here exposed at this point and in this working was christened the Black Tail vein for the purpose of this litigation. Prior to any thought of this litigation—

The COURT.—There is nothing in a name. You can call it whatever you please.

(Testimony of Fred Searles, Jr.)

Mr. COLBY.—We are governed to a great extent by what practical miners think of these matters. Their opinions have greater weight even than what experts think of it.

The COURT.—Who christened it, a practical miner or somebody else?

Mr. COLBY.—What I want to bring out from this witness is the fact that he has called this the Black Tail all through without ever giving any intimation it was ever called anything else.

Mr. GRAY.—If you wish to call it something else I have no objection.

The COURT.—He is basing his conclusion upon his own [63] examination and not upon names or anything of that kind. I will sustain the objection.

A. I was never in this camp, Mr. Colby, until this litigation was started.

Mr. COLBY.—The fact answers for itself, as far as reports and miners are concerned. They call it something else.

Q. Now, I would like to have you point out Mr. Searles, on this composite map where to the south, beyond this right angle turn, there has been any stoping done inside of the Lone Pine.

A. There has been none inside of the Lone Pine claim.

Q. I would also like to have you point out to the Court and so that we can get it into the record the work that has been driven since this litigation was

(Testimony of Fred Searles, Jr.)

started and which we will refer to generally as litigation work.

A. I don't think I can do that, Mr. Colby. I don't know entirely. I can point out certain workings.

Q. Certain work was done under your direction, wasn't there? A. Yes.

Q. Point that out.

A. I directed that the hole called the Sand winze be sunk, and I gave general directions that the work be done to trace the Black Tail vein across the
on a lower
gulch or a little level so that it could be followed continuously; and possibly also general directions that are responsible for the Gulch winze having been sunk, although I as a matter of fact didn't give any instructions to sink the winze in this way.

Q. The winze level is also a part of that work, isn't it? [64]

A. It is a part of that work; yes. I think that last year I remember discussing—I think I also suggested that a drift on the 300 level be driven through the hanging-wall of the Black Tail vein for some distance toward the end-line of the Lone Pine claim, without any relation to the structure of the rock at the particular point where it was driven, and I think that that was responsible for the working shown as 332 having been constructed. I am not certain about that, but I believe that to be true.

Q. This working labeled "End-line Tunnel" was

(Testimony of Fred Searles, Jr.)

also done under your direction, wasn't it?

A. No, sir.

Q. It was done after you became connected with the case and was done for the purpose of litigation?

A. I don't know what the purpose of it was. I presume it was done to show the point at which the Black Tail vein crosses the south end-line. I didn't have anything to do with it.

Q. Was that for the purpose of mining ore?

A. No, sir. I did, though, direct some work in connection with this examination which led to the discovery of a very considerable ore body, but not on this vein; in the Surprise vein. [65]

Q. I don't doubt your ability to find ore, if ore is around. I am interested with Mr. Searles in a mine that has developed quite a little ore, so I have had practical experience which leads me to believe that he is a practical miner in that respect when there is any ore around.

A. Thank you.

Q. Now, you stated something about there being transverse post mineral faults over on the Black Tail claim that followed the Black Tail vein, as I understood it. A. Yes, sir.

Q. What is the dip and strike of those faults? Take first the fault that passes between points 212 and 213.

A. That fault strikes north 35 degrees east and dips 40 degrees to the southeast and consists only of a gouge. There is no quartz along with it.

Q. Take the fault that passes point 232.

(Testimony of Fred Searles, Jr.)

A. That is a crooked fault. Its average strike within the area developed is north 32 degrees east, and its dip varies from 75 degrees to practically vertical. It is not parallel in dip with the other.

Q. 75 which way?

A. 75 degrees to the southeast.

Q. Now, are there any other postmineral faults in this area that are conspicuous that you know of?

A. The biggest postmineral fault in this area is a fault right along the Surprise-Pearl vein. That is, of course, the strike of the—

Q. That accompanies the vein and produces considerable gouge? [66]

A. Brecciated quartz breaks it all up.

Q. Is there not some faulting along this Black Tail vein that you notice?

A. Little slips, like this wall, for instance. In many places in the mine there are little slips on one wall or the other which show evidence of post-mineral movement in the vein to break up the quartz.

Q. I will confine my question to the Black Tail vein within the Black Tail ground.

A. Yes, there is a little gouge in the footwall near Station 231.

Q. Do you find it in other places along the vein in the Black Tail claim going south? I see some blue lines marked along the foot of the Black Tail passing 231B. What is that intended to represent?

A. That is intended to represent gouge.

Q. Do you find gouge in any other places to the

(Testimony of Fred Searles, Jr.)

southeast following along the Black Tail, any pronounced gouge, indicating a faulting or movement along the Black Tail?

A. I don't remember any. My notes show the veins as if there were not much of a gouge there.

Q. Do you find any postmineral faulting over in the Lone Pine claim? A. On the Black Tail?

Q. No, on any of the veins, crossing any of them in any direction, any pronounced faults?

A. There are some small faults. I testified to one in the end-line tunnel, and to two in the upper 2 level near Station 348. [67]

Q. Do you find any as you get over towards the Pine 200 level?

A. The last ones I mentioned were in the Pine 200 level.

Q. The tunnel portion of the level coming in straight? A. In the adit?

Q. Yes.

A. There are some gouges there, but I don't know that there are faults of any considerable displacement. The trouble is this is a homogeneous rock, and you have nothing to measure displacement by.

Q. Now, as we come south along the Black Tail vein you introduced a photograph here of the face of that little drift to the north of 231D?

A. Yes, sir.

Q. You picked the vein up again, as I understand, near the point 231—passing through the point 231 on the other portion of that level? A. Yes, sir.

Q. What was the appearance of that vein at the

(Testimony of Fred Searles, Jr.)

farthest point north you could find it in that level?

A. There is gouge on the footwall of the vein and it runs into the side of the drift, the whole vein does diagonally, so that you do not have a square section cut across it. But it is a good strong vein, having quite a thickness of quartz on it. I will try to refresh my memory as to the exact thickness.

Q. Sort of caved there, isn't it?

A. Sloughed in; yes.

Q. Sloughed in from the side of the roof? I would like to see your notes on that particular point. [68]

A. It shows a good strong vein dipping to the northeast about 40 degrees. I have a note there. There is another vein also shown on this map running out of the drift which runs nearly due east from Station 231, and that comes into the main Black Tail vein right at Station 231, and I have a note there that the relation of these veins to the bottom of the drift is obscured by a muck pile.

Q. It would be a comparatively easy matter to develop that vein going across north from that end line?

A. It would be a comparatively easy matter. It would be a matter of some expense. You would have to clean out the level and put in track and air-pipes and a compressor and so on, but it could be done.

Q. You don't think that vein has pinched out right in the side of that drift going northerly?

A. No, I am absolutely confident that it has not.

(Testimony of Fred Searles, Jr.)

Q. Now, we come up on the surface, the last point where you found the outcrop of that vein is in what dip?

A. It is 12 or 13 feet northerly from the pit T-882. There it runs underneath the wash.

Q. Taking into consideration the slope and configuration of that hill, you expect to find the outcrop of that Black Tail vein lying up with your end-line tunnel, passing through your end-line tunnel?

A. Yes.

Q. Which way would the apex of that vein be thrown? You call that migration, don't you?

A. Yes.

Q. Where an apex is thrown out of its normal or technical strike by being followed down a steep slope, along a steep slope—I say which way would that have been thrown as you pass down this slope, taking into consideration its normal migration?
[69]

A. The outcrop or apex would migrate to the east from the strike because the vein is running very slightly down hill, the migration would be very small, but it would be almost in continuation of the line of the apex, because it has been continuously running downhill.

Q. Now, let me understand you, you say it has been continuously running downhill. Take it from point 40C to this point where you say it is last exposed, T875, is that running downhill?

A. 28 feet; yes, sir.

Q. It is running down 28 feet in that distance?

(Testimony of Fred Searles, Jr.)

A. Yes, sir.

Q. What is the length of that distance?

A. 380 feet.

Q. You have a 20-foot drop in 180 feet?

A. 380 feet.

Q. 380 feet. A 20-foot drop in 380 feet. So you would call that, wouldn't you, comparatively level?

A. It is level compared with some things, certainly.

Q. It is level compared with everything from T-875 down to T-842, isn't it?

A. That is a steeper course downhill; yes, sir.

Q. As you say, the migration would be to the east, if it was a normal migration, is that not true?

A. The migration all the way would be slightly to the east from the strike and if the vein were absolutely straight the migration for a geometrical plane would be more in that portion than in the other portion.

Q. As a matter of fact, you have the apex shown turning to the west? A. Yes, sir. [70]

Q. Where do you find the bend?

A. I have never seen the bend in that interval.

Q. In following its normal course, as you say its normal migration would be to the east, wouldn't you expect to find that apex to the east then?

A. I would, if there were no bend in the vein.

Q. Where is the bend that you saw?

A. I say there is a bend in the vein because I know where the vein crosses over here.

Q. I mean you jump at the conclusion then that

(Testimony of Fred Searles, Jr.)

those two are the same in spite of the fact—

A. I certainly am of that opinion, whether I jump at it or arrive at it.

Q. It is immaterial how you reach it, but in spite of the fact that the normal migration of that apex would take you the other way—

A. I quite agree with you that there must be a slight turn in the vein there to account for the direction of that line.

Q. And the only evidence you have of the turn is your desire—or, I won't say your desire, but your idea is that it crosses the end-line at that particular point in the end-line trench?

A. That is true. The vein is not absolutely straight anywhere. A very slight deflection of that kind is nothing to be wondered at.

Q. Now, as we come a little further northerly here, if you will measure that jump for me between the two exposures with your scale where it is last seen to the end-line and [71] trench?

A. There is 85 feet in which the outcrop of that vein is covered up with the wash.

Q. Taking this end-line trench found at T-842, what do you find there?

A. We have a deep trench dug in the glacial drift, lagged up with boards, up the side, and stulls across it to keep it from caving in altogether, and the lower part of that trench is not down to bedrock. The upper part of it shows bedrock, and at the present time there is exposed right where this trench from T-843 comes into it, that trench however, not

(Testimony of Fred Searles, Jr.)

being down to bedrock, within 6 or 7 feet, but right in line with that there is an exposure of quartz in the bottom of the trench. Now, I saw that trench once before, a year ago about, there was more quartz to be seen there than there is now.

Q. Do you think that is in place?

A. Do I think that quartz is in place?

Q. Yes, sir.

A. No, possibly that is not in place, in the sense that it is loose, but I don't think it is movable.

Q. You do find large quartz boulders, though, immediately above on the hill, don't you?

A. Large quartz boulders?

Q. Yes, sir.

A. I happen to remember a big boulder of white granite up there. Possibly you have mistaken that.

Q. No. A. I don't remember it.

Mr. GRAY.—Boulder of what?

A. There is a large white granite boulder in the wash [72] above that. I don't remember any large quartz boulders. There may be some.

Mr. COLBY.—Don't you find large quartz boulders on that hillside generally in float, and rather large ones?

A. There is a good deal of float particularly in this place; there is some quartz laying around on the surface.

Q. What strike did you get as the strike of that exposure in T-842?

A. All I can say is it ran substantially across the trench about the direction of the vein.

(Testimony of Fred Searles, Jr.)

Q. Wasn't it exposed so you could get it?

A. No, it was a very poor exposure there.

Q. This broad red band that you have crossing the end-line trench and extending to a certain extent across the cut goes to that T-843, what is that?

A. That is intended to be a projection from the end-line tunnel of the stringer condition of veins, If you will notice that carefully, it is a collection of red lines.

Q. You generally put those in broken effects, don't you, when you project?

A. Well, this is a projection of four or five feet.

Q. You have what you consider what an exposure of the Black Tail vein in the tunnel immediately below. Can you give me your notes on that?

Mr. GRAY.—Suppose you take the judge in your confidence on that and lay them up there where you can see them.

A. I am sorry to say this is rather a poor map of that area. The vein coming up this trench is faulted there first about 2 feet, and then continues along the part of the tunnel which is still open and just along there I have not [73] its width, but I have a good recollection of it as being at least 2 feet thick until right about where the tunnel arches overhead, this is goes underground entirely, there is a smooth wall crossing the tunnel and the quartz ends against that, and then in that tunnel for a distance there is no quartz to be seen. The roof of the tunnel is wash after passing along that for a short distance. I have measured that, so I know what that is. It is

(Testimony of Fred Searles, Jr.)

14 feet. There is a band of quartz comes in at that side of the drift.

Mr. GRAY.—Which side?

A. On the southerly side of the drift. I have a strike on that of north 55 degrees east, a dip of 50 degrees, 8 inches to 10 inches of banded quartz. That was at the floor of the drift. Since this map was made there has been one round shot in the drift right here where that quartz enters the southerly side and the quartz is shown going in there and there is also a wall shown on one side of that little hole. Further, there has been a round shot at the face right at the end-line into the foot-wall and additional quartz is exposed there, but it is quartz which crosses the drift and which is a fairly massive band there, 8 or 10 inches thick, as it goes up on the dip, goes out like that—

The COURT.—I would understand this a whole lot better if I saw the map of it.

Mr. COLBY.—He is referring right now to this portion right here, the vein coming in underneath this.

Q. The point that I want to get at is, isn't it a fact that there is not that amount of quartz indicated there on this Exhibit No. 2 showing in the end of that tunnel that goes underground. [74]

A. Yes, I testified this morning there are 12 or 13 stringers of quartz there.

Q. What are their strike and depth?

A. The strike and dip is about north 50 degrees east, and dip 50 degrees.

(Testimony of Fred Searles, Jr.)

Q. Does that correspond with the general strike of the vein, the Black Tail vein?

A. I should say north 50 degrees west.

Q. North 50 degrees west?

A. Yes, sir; it does correspond.

Q. And that exposure that you see right in the face of that tunnel, you testify dips and strikes in the same direction as the main Black Tail vein?

A. Yes, sir, a majority of the quartz. There is one stringer in the face of that hole, now that you speak of it, I remember, which is transverse of the rest of them.

Q. Isn't it a fact that the only thing that you have got in the end of that tunnel that corresponds to the line of that Black Tail vein is a gouge seam running through there, a gouge showing there and no quartz?

A. Certainly it is not a fact.

Q. You looked at that the last morning just before you left, didn't you?

A. Yes, sir. I might have a piece of one of those quartz stringers.

The COURT.—The Court will take a recess for 5 or 10 minutes, Gentlemen.

(Thereupon a recess was taken.)

The WITNESS.—Replying further to that question I will say that I hold in my hand here, marked "B" for identification the widest, biggest piece of quartz I could pick [75] out of that face, that is to say, that thickness is the widest stringer that showed in that face, and the majority of those stringers are narrower than that, I counted, I am un-

(Testimony of Fred Searles, Jr.)

certain, whether 12 or 13 which have a strike substantially parallel to the Blacktail vein, and this other piece marked "C" for identification shows something of the character of the rock which in part exists in that vein between the stringers, and that rock has really nearly as much quartz as the white quartz, the original structure of the rock has been obliterated, it has been replaced by metasomatic action until it is practically silica also—the character of the material in part between these stringers that exist in that face—some of the material in the face, though, is not nearly as much silicified or altered as these. I am frank to say that this is the biggest piece of quartz that I could find there. Most of the stringers are much smaller.

Mr. GRAY.—Let those "B" and "C" be our Exhibits No. 10.

Mr. COLBY.—Q. Will you designate just where those were taken?

A. They were taken from the last round that was fired in the face of that end-line tunnel. The round had been shot from the footwall side. I am very willing to state, Mr. Colby, that that is a weak showing for the Blacktail vein. I think that there is probably some more quartz on one side or the other of that drift. It seems very incredible to me that as big and strong a vein as we have here at Station 231 should be as weak as that at that tunnel, although it is a satisfactory showing of vein. [76]

Q. Now, referring again to this turn to the East of point 343, where you say a branch of the Black Tail

(Testimony of Fred Searles, Jr.)

vein goes off on that level, where do you find the name "Black Tail vein" beyond and to the south of 343?

A. The condition obtaining there is that the strand of quartz shown on the southerly side of that level is very flat, so that in the drift between Station 343 and 344, that quartz extends in that drift diagonally up across the side of the drift practically to Station 344, because it is flat. But other than that and a very small stringer in the face, there is no quartz in that drift. There is, however, quartz diverging into the westerly side of the drift right underneath the raise, and I think there is a portion of the vein which extends over there, and further sections drawn through the gulch winze here would indicate that the main portion of the Black Tail vein should lie beyond the face, that is, south of the face at Station 344. And I have very little doubt that a portion of the vein extends on the third level somewhere across through here.

Q. How long would it have taken you to drift from the end of that level to Station 344, or that vicinity, to where you hit the vein?

A. Oh, a very short distance. I will try and do it yet, if you wish to have it done.

Q. Not unless both sides agree to additional work and the court does not object. We do not want to delay the case, of course. When did that level reach the point 344?

A. I don't know. It was between the first time I saw the mine and my last visit to it some time in that year. [77]

(Testimony of Fred Searles, Jr.)

Q. In other words, it has been several months that that has been standing in that condition and as you say, it would take only a few days to reach your main vein by crosscutting to the west?

A. As far as I know. I think the vein could be developed on this side of the turn or very near, on those levels, but I am uncertain just where it is, and it might be quite a job to do all of that development, and worth all the mine is worth.

Q. Now, coming to this little stub of work, coming out from No. 2 level, from the point 331½, which you have marked in pencil, isn't it a fact that the strongest showing is on the right hand side as you come in quartz, along that side, rather than the branch that you speak of going along to the left?

A. Well, the entire exposure of quartz in that drift, except at that end, is on the right side of the drift as you come in. The left-hand side of the drift is a wash.

Q. As a matter of fact, isn't that quartz turning in to the right or to the west as you go into that little drift?

A. As a matter of fact, the quartz showing in the last 20 feet of that drift certainly is not. It there has very plainly the strike, the northwest strike of the southerly and main portion of the Black Tail vein. But as I stated on Direct, there is a branch of the vein right at Station 331½ entering the wall of the drift. I was rather surprised that some work was not done to follow it out there.

Q. Aren't there planes in that quartz that keep

(Testimony of Fred Searles, Jr.)

turning off to the right as you go into the drift towards the end?

A. You mean right at Station 331½?

Q. Beyond that. [78]

A. No, sir, there are not. The structure of that quartz is very plainly striking to the southeast.

Q. The quartz is really brecciated, isn't it, broken up?

A. It is broken, lies right on the surface.

Q. That was the original surface, wasn't it? I mean that was an outcrop of the vein before the wash covered it? Or, to put it in another way, if the wash were taken away, it would outcrop at that point?

A. Yes.

Q. And it would be very natural to find it discolored and broken and seamed and easily removed?

A. That is true.

Q. Now, coming over to Station 320 on the No. 2 level, right at this point, there is a little stub turning to the north or northwest? A. Yes, sir.

Q. What is the showing in that stub of vein condition, if any?

A. There is a small vein drifted on for that distance into that stub. That is shown in detail and in its proper proportion to the Black Tail vein on Plaintiff's Exhibit 4, at Station 320-B. It consists of a streak of gouge about an inch to two inches thick, on a plainly defined wall, which runs as shown by the blue line at 320-D, and overlying that a band of quartz, which from 323 to the face of that drift is parallel to that gouge and lies on it as a wall.

(Testimony of Fred Searles, Jr.)

Q. How wide is it?

A. The quartz is one foot wide at the face and averages about a foot between the face and 320-B. Right at the face there is additional quartz on the northerly side of that drift.

Q. That has a strike that corresponds substantially with [79] strikes on these segments of veins that you found between 331, we will say, and 348?

A. I don't know exactly what you refer to by segments of veins between those.

Q. You haven't got a continuous vein between those stations, have you?

A. It certainly is a continuous vein.

Q. I mean you haven't a continuous exposure of the vein? A. No, sir.

Q. But as far as those segments which are exposed are concerned and their strikes are concerned, this correlates with it, doesn't it, substantially?

A. It is substantially parallel with it. It is along the direction of the northwest conjugate fissuring.

Q. Do you know of a little winze in that stub drift?

A. I think there may be a winze there. At least there is a hole full of water. I don't know how deep it is.

Q. That is not shown on this map? That winze, I mean, the indication of a winze? A. No.

Q. In other words, when you indicate a winze, you make an indication here of gulch winze, a sort of a crossmarking in black, but that is not indicated here, nor is it indicated on any of your maps as far as I can see, is it?

(Testimony of Fred Searles, Jr.)

A. I don't know of its being indicated on any map. I had forgotten all about it until you mentioned it. There is a hole there full of water.

Q. Did you make any inquiries as to what is shown there or desire to have it cleaned out? [80]

A. No, sir.

Q. You don't think it has any bearing on the case?

A. None whatever that I know of.

Q. Now, coming over here on your Exhibit 2, just to the east of letter "L," Pearl No. 2 tunnel, I see a marking there that would indicate a vein crossing that tunnel. What do your notes show as to the dip and strike of that?

A. At a point in that tunnel 12 feet outside, that is toward the mouth of Station 321, there is a gouged wall that has a strike of north 48 to 50 degrees west and a dip that is rather crooked, of from 55 to 70 degrees. That is exposed in that crosscut. That is the adit itself, I think, also is shown in the face of the little stub drift that ran southwesterly from Station 322.

Q. That just merely shows an indication in the face? A. Yes.

Q. (Continuing.) That you might have reached the wall of that vein?

A. That is right. I think it is probably called a vein. It is chiefly gouged, but there is a little quartz in it.

Q. That corresponds in general strike and dip with some of these other exposures down here in the

(Testimony of Fred Searles, Jr.)

southern end of the Lone Pine which you correlate with your Black Tail vein?

A. That has the northwest strike of about half of these fissures. That is to say, most of the veins in this ground run either in a northeasterly direction or northwesterly direction and are parallel or sub-parallel; that is, parallel to the northwest.

Q. Now, coming for a moment to the exposures in these [81] trenches here, T-840, 839, 838, and T-901, will you give me in a general way the width of quartz that you find in those trenches?

A. In T-840, there is a substantial quartz vein 3½ feet thick, not all of it white quartz; some of it silicified rock.

Q. That is the width of the vein, is it?

A. Yes, sir. In trench 839, there is 3 to 3½ feet of quartz and silicified rock and above this, that is to say southwesterly of it, there is country rock. It shows some stringers clear to the upper end of the trench.

Q. If you took that all in, how wide would that make the formation?

A. That trench is about 15 feet long, I should think. That trench 838 has silicified rock and quartz to a total width of 6 feet and a strong appearing vein. In trench 901, at the southerly end of the trench, there is 4 feet of quartz. That diminishes rapidly in thickness.

Q. Not because it pinches out?

A. It does not pinch out.

Q. It disappears in the walls?

(Testimony of Fred Searles, Jr.)

A. No, the entire thickness is exposed on the floor of that trench just before you go down into the hole where it is 14 inches thick. Then there is a short distance where you enter the hole, where the quartz is back of the trenches as shown in the Black line, and there was an interval there where the quartz is not exposed. I think it is in the right hand side of the trench, but it is near the bottom part of the trench. That is, in bedrock. The upper part is in wash. And there [82] is an interval there of 5 or 6 feet.

Q. There may be quartz under the wash that you did not see, or were not able to see.

A. I think there is quartz under that. The strike is indicated by a line drawn through those trenches.

The COURT.—That is a general northeasterly direction?

A. Yes, sir. It is on the surface map.

Q. I don't care so much about having it on this one. Would it be possible for you to put that exposure on your 10-foot detail map in pencil? I don't want to destroy the picturesque character of any of these exhibits, but have you any objection, Mr. Gray?

Mr. GRAY.—Not if you would like to have it done. Do anything you want to, Mr. Colby.

Mr. COLBY.—I don't want to take the time of the Court now in doing that.

A. I would be glad to do it, Mr. Colby, but my impression is that the map is not big enough to take them all in.

Q. It would take in part of the trenches. As far as you can, I mean.

(Testimony of Fred Searles, Jr.)

A. You see that gap across the wash there is about 100 feet.

Q. Let us measure it.

A. Mr. GRAY.—Mr. Colby, why don't you have one of your engineers take a tracing of that, and he can put that on.

Q. We can measure from the mouth of that tunnel here, how far is that? A. Eighty-six feet.

Q. Now, measure on Exhibit 4. [83]

A. All right.

Q. That is the distance to the side-line?

A. I will have to plat the side-line on here.

Q. I wish you would do that and color in red here.

Mr. GRAY.—If it was not shown on any of the maps, I would not object to it, but it is shown here.

Mr. COLBY.—You do not show it in its proper relation. You have it on a surface map here where the main strike of your vein is some 60 feet or so above, so it does not show in its proper relation. Produce your proper relation on this 10-foot detail map, because those would be practically on the same level, wouldn't they, those exposures, what you call the Black Tail vein up here and the upper portion of that detailed sketch, Exhibit No. 4, and the elevation of these trenches? It would be practically on the same level, wouldn't it?

A. I am a little confused about what you say. But if I understand you correctly, you inquire whether the trenches T-838, 839 and 840 are about the same level as No. 2 Pine.

Q. Yes.

(Testimony of Fred Searles, Jr.)

A. If that is the inquiry, they are.

Q. So that the relation between the coloring that you might place through those trenches, to this color in the upper portion of the map which is intended to indicate what you call the Black Tail vein, would be in their relative positions, as you place it on here, on the same level. That is the point I am getting at.

A. If I put these trenches on a 10-foot scale map and show the vein across them, you will have in these trenches an [84] exposure of the vein on about the same level as the No. 2 Pine, is that your inquiry?

Q. That is it. A. That is correct.

Q. That is why I wish that put on, if you will do that.

A. Would you like to have me do that now?

Q. No.

Mr. GRAY.—Mr. Colby, why don't you have one of your engineers do that work? He can do it just as well as Mr. Searles.

Mr. COLBY.—Our engineers might not agree with them.

Mr. GRAY.—But we have it on the other map. All they have to do is to transfer it and enlarge the scale.

Mr. COLBY.—I would like Mr. Searles to do it, unless you have some particular objection.

Mr. GRAY.—If he wants to do the work, all right.

Mr. COLBY.—All he has to do is to trace it in pencil and to color the vein exposure as he finds it on that level, in those trenches, in red, so that it will correspond with the rest of the exhibit, in red pencil.

(Testimony of Fred Searles, Jr.)

A. I will be glad to do it.

Q. Now, when we come to this Exhibit 1, that you have here, I notice that the red color that you represent the apex of the Black Tail vein with, as it crosses to the southwest from the easterly side-line, comes along through the claim on a straight course until it reaches a point near Station 544, and then suddenly it turns and curves to the south at a considerable angle from its former course to a point, we will [85] say, where it crosses contour line 2880. Is that a real curve in that vein, or is it an apparent curve due to migration of apex?

A. It has an element of both. The strike of the vein begins to bend around, as I stated this morning, within the ore body itself, so that in standing on the hill at the easterly edge of the opening marked "Open stope" and looking down into that stope one can see the stope and the vein which is left in its walls turning around in strike, and that turn within the limits of that stope is 20 degrees as taken with a compass. Beyond the limits of that stope there is a further turn of the vein itself, and its structure and its walls, but there is also an effect due to the migration of the apex on the hillside which accentuates that turn, so that the red line here indicating the apex of the Black Tail vein and the apex itself on the surface are of course, not in the same position as they would be if that apex was on a flat surface.

Q. Now, to bring that out a little further, your Pine 100 level is just below contour 2900—would come just below that wouldn't it? A. Yes.

(Testimony of Fred See)

Q. It would be right at contour 2900. So that if you took a horizontal section through what we call the Black Tail vein, at that 2900 level, you would get a strike substantially as is shown on Exhibit 2 as representing your vein, which you call the Black Tail, running along the 100 level, wouldn't you?

A. Read that.

Q. (Last question read.)

A. You could trace on that 100 plane, similar to that— [86]

Q. What we call an engineer's or true strike—the technical as distinguished from the miner's strike taken on the surface?

A. Yes, it would be the intersection on that plane, and a true strike would be found by taking the points furthest exposed.

Q. In other words, you get the true strike of that vein on that level, and there is no such turning as is apparent, I mean, or would appear to take place, on your surface map as an actual fact in the real strike of the vein, is there? A. There is, yes.

Q. I say there is none to that extent as it would appear to be made by the vein from your surface map? In other words, what is the difference in direction, the angle of course, between this portion of the vein between 554 and 544 as measured against the distance between 544 and 552? What is the angle there?

A. The angle included within the two lines which you mentioned is approximately 40 degrees. If I understand you correctly, you wish to indicate that

(Testimony of Fred Searles, Jr.)

on a horizontal plane, the curve would not be the same as that shown on the surface, which is a hillside?

Q. Yes.

A. That is, of course, perfectly true. However, the total result is the same, because whether the vein crop is on the hillside or any other surface, when it finally gets around to this strike, it has this strike, and the only difference is the curve in the line between the two courses which it finally occupied.

Q. The point I wish to bring out is on this 100-foot [87] level between these points, you would not have the same turning which appears on this surface, because you haven't the migration, isn't that true?

A. You would have the same final result, but you would not have it accomplished through a line which would take the same course exactly that this line does on the surface map.

Q. In other words, you can have a vein, which is a sheet of material, cutting into a hillside like this, and coming along level from the east side-line, out to the point where it takes this apparent turn on Plaintiff's Exhibit 1, and migrates down the hill, and yet, you would not necessarily have any change in real strike, and the change in direction would be, as far as the vein is concerned, apparent only as far as strike is concerned.

A. You can have a vein cropping on the hillside and have a curve in the apex or outcrop of that vein without any curve in the strike of the vein, but you could not have a straight vein, that is a vein

(Testimony of Fred Searles, Jr.)

that was a mathematical plane, intersect this particular hillside, and get the particular curve that the apex of this vein shows without a curve in the strike of the vein.

Q. There is, as you say, a slight change in the direction. You call it 20 degrees.

A. There is a change of 20 degrees within that slope, and there is an additional change in the strike of the vein going down to the point that you mentioned.

Q. You don't think that any of that is accounted for by migration?

A. I know certainly that some of it is. [88]

Q. Now, coming over to the discovery cut on the Lone Pine, that is marked here "Discovery Cut by Patent Notes." Let me see your note that you have taken of the exposures at that point. You have not colored the veins in red or the quartz exposures as you come to the west from the discovery cut?

A. No.

Q. What was the width of the quartz that you found in the discovery cut itself?

A. To the best of my recollection there is now exposed 12 inches.

Q. Is that all of the vein, or is there more vein material than the actual width of the quartz?

A. There are two other stringers that cross the crosscut.

Q. At different points, and they may not be included in that 12 inches?

A. No, sir.

(Testimony of Fred Searles, Jr.)

Q. Now, as you come to the west from the discovery trench, we will say about 10 feet, what width of quartz do you get at that point?

A. I have no note on the distance of ten feet, but the vein continues with substantially that width until at a distance of about 20 feet it is considerably wider; 2 feet and a half, I think, at one point.

Q. Isn't there a place there where it is $5\frac{1}{2}$ feet wide?

A. I think it is not. I certainly did not see such an exposure myself. [89]

Q. Did you gather from the quartz that you found on the north, the farthest quartz on the north, any details regarding $5\frac{1}{2}$ feet of solid quartz?

A. Not solid quartz. Where some of these stringers come together, you can get 10 or 12 feet, perhaps.

Q. That may be true, but do you call those stringers when they obtain that width?

A. I call them veins. I think that those showings up there are perhaps of sufficient importance, some at least, to be designated by the name of veins.

Q. Haven't you seen hundreds of discovery veins that are not as strong as that showing that is there?

Mr. GRAY.—I don't see that that is very material, but I won't object. [90]

Q. Haven't you seen many discovery veins where the showing is not nearly as strong as that discovery cut in this immediate vicinity?

A. In the immediate vicinity to what?

Q. Of the discovery cut.

A. You mean have I seen this in the immediate vicinity of Republic?

(Testimony of Fred Searles, Jr.)

Q. No.

A. I have known many discovery cuts that did not have as much showing in as that one.

Q. Of vein material? A. Of vein material.

Q. Now, as I understand you, when you traced that showing of quartz down to the east side-line there were three gaps there which according to your idea we jumped from one stringer of quartz, one exposure to another. In what general direction were all of these exposures of quartz running longitudinally, what was their general direction?

A. Strike northwest.

Q. Substantially parallel? A. Yes.

Q. You found no cross veins through there?

A. Yes a great many.

Q. Where are they indicated here?

A. You mean in that immediate vicinity down there? A. Yes.

A. I don't know as I know of any in that immediate vicinity. Yes there are some. For instance in trench 828 there is a vein running to this northwest and southeast strike shown for a distance of 20 feet in that trench. Of course [91] the principal part of these trenches are run to develop veins running this way, but I think it would be possible to develop veins in the other direction.

Q. Don't you think it would be possible to run in continuous quartz even if we had failed in the short time we had to run that trench—

Mr. GRAY.—In the short time?

Mr. COLBY.—In the short time we were running this particular trench.

(Testimony of Fred Searles, Jr.)

Mr. GRAY.—You got that permission from his Honor before last Christmas.

Mr. COLBY.—I think you are mistaken on that. We stipulated on that.

Mr. GRAY.—All right we stipulated before last Christmas.

Mr. COLBY.—As far as running these particular trenches, we asked you about a month ago and it was only recently we got the permission. Now, I don't want to criticize the opposite side because they have been very courteous. Sometimes the permission came a little late and this time we were crowded so it was impossible to complete all the work we wanted to do satisfactorily. I don't want to complain because Mr. Gray has been very generous to allow us to do this work when we got down to it. Sometimes it took a long time to get down to it, largely I suppose because we were largely separated; but as a matter of fact when we got started on this work we had to short a time to complete it.

Q. Don't you think, with your ability—and I mean it when I say "Ability"—that you can follow continuous quartz [92] from this discovery quartz from this cut to the side-line?

A. I can hardly answer otherwise than yes in view of that question; I think I can and if I might strain your opinion as to that ability a little further, I think that if the end was worth while that I could do more; I could follow continuous quartz from that discovery cut over to this vein and perhaps clear out to this other end-line.

(Testimony of Fred Searles, Jr.)

Q. Now, if that is the case, let's take your No. 2 exhibit and the No. 1 tunnel showing it. Where do you have your cross-veins on there that you can follow from your discovery cut down to what you call the Black Tail vein.

A. That No. 1 tunnel is a crosscut in a northeasterly direction.

Q. Northwesterly?

A. Northwesterly direction. Of course, therefore, it intersects the northeast stringers. But if a crosscut were run this way it might easily intersect—for instance, Black Tail tunnel running through here develops nothing but northeast stringers. The crosscut running in this direction develops the other system.

Q. As a matter of fact, these recently exposed stringers that come down in this direction so that you can connect up the discovery cut with this so-called Black Tail vein?

A. There don't happen to be any continuous stringers, at least in that direction within that limit, but there are numerous ones on the side-line there.

Q. Are they of the same substantial size as the stringers which you have been referring to or the vein which runs from the discovery cut? [93]

A. They are substantially the same size but not of the same frequency. In this particular area these stringers in this direction, little veins in this direction, are much more numerous than those running this way.

Q. Is that the general structure of the country at

(Testimony of Fred Searles, Jr.)

right angles to the side lines of the claim?

A. The general structure of the country, as I attempted to point out this morning, is in two directions, due to the method of it having been stressed.

Q. Coming a little further along on this map—it don't show I believe on the surface map—but do you know what is commonly referred to as the No. 4 vein?

A. No, sir.

Q. Your nomenclature is a little different from mine so I will have to describe it by referring to Exhibit 2. What do you call this vein which is shown running through Stations 148, 149 and 150?

A. There are at least two veins there and I do not know of any name for any one of them.

Q. What do you call the vein which runs through 281 and 282—you haven't any station to the west of that particular cross working?

A. To the best of my recollection there is more than one vein shown in that working, but I do not know of any name for any one of them.

Q. Is there any stoping in that vicinity?

A. There is a stope on one of those levels, a small stope over the working called the Pearl winze.

Q. Is that the only stope that you saw in that vicinity? A. Yes, that is the only stope. [94]

Q. You don't know of any stopes than that one of the Pearl winze? A. That continues along?

Q. How long does that continue? How long is that stope?

A. My recollection is that the limit of it to the northwest is a raise.

(Testimony of Fred Searles, Jr.)

Q. Northeast?

A. Northeast is a raise which is said at least to go to the surface. I presume it is a continuation of what is called the north shaft, so that the full length of the stope there would be about 85 feet.

Q. Do you know anything about its vertical dimension?

A. Goes up as far as I can see, that is in the vicinity of the raise.

Q. You would call that a pretty substantial vein, wouldn't you?

A. It is 2 feet of banded ore at the edge of the stope, 2½ feet wide at another place, but the stope is really put up partially on the intersection of 2 veins, this vein lying about 28 feet northerly of Station 148 and the vein which runs through Station 148, and both of these come into the stope near the raise that I have previously mentioned.

Q. The general strike of that vein is parallel to the general strike of your Black Tail vein from or near the part that is south of the right angle turn?

A. I don't know of any right angle turn.

Q. I am not trying to lead you of course into any admission or anything of that sort.

A. Yes, sir. The two veins are substantially parallel.

Q. Also substantially parallel to the two veins shown in [95] the discovery cut?

A. That is true. [96]

Q. Now, coming along a little further on the surface map, you have a couple of veins here marked as

(Testimony of Fred Searles, Jr.)

running northwest and southeast, one in a trench with a pit at the end of it, marked "T" 834?

A. Yes, sir.

Q. Do you think that is the correct direction for that exposure—I assume that must be quartz there.

A. I think it is.

Q. And where does that show in this trench marked T-835?

A. There is nothing other than a stringer that lines up for it at all. If continued in that direction, it is presumably faulted. If I might explain further, it looks in a general way at the surface there as though that vein there in the trench T-834 is the same as the vein in the trench T-835, and such may be the case, but a close examination of the directions of the vein, right at the end of the little shaft, at the end of trench T-834, shows it is running northwesterly. Now, that may turn around there, as the Blacktail vein does run out this way. You cannot tell what is going to happen in this country, that is fractured in both directions. Or it may be faulted in there. I am sure I do not know.

Q. What vein is this shown in your north shaft crossing it?

A. That, I presume, is the same vein that shows in this little stope that we were just talking about on the Pearl No. 2 tunnel level. I say I presume so, [97] because that raise which goes up from that level connects, I believe, with the north shaft and comes out the surface, so if the vein is followed continuously that is the same vein.

(Testimony of Fred Searles, Jr.)

Q. Is there a vein shown at the surface crossing that north shaft?

A. There is a vein shown there parallel with the plates.

Q. What is the size of that vein?

A. It is a substantial vein, as I recollect it there, 3 feet wide.

Q. Now, coming to another point, I believe on one of the exhibits here you gave the dip of this portion of the Blacktail vein, as you understood it to be, connecting the extreme portions where the vein has turned, and crossing the side-line and end-line, to give its average strike. Suppose we eliminate this southwestern portion of your vein beyond where you consider it makes a turn, what is the average strike of the remaining portion as represented by those levels there, 100, 200, 300, 400, 500, and 600?

A. If you will give me the general line—

Q. An average strike?

A. That strike on that vein—

Q. Take it for 300 feet on each side of your side-line.

Mr. GRAY.—Of which side-line, Mr. Colby?

Mr. COLBY.—The east side-line. There would [98] only be one because according to your idea it crosses the end-line.

Mr. GRAY.—I do not object to your getting it, if you want to. I do not think it is—

Mr. COLBY.—The point I want to bring out, of course you can make any kind of a strike, you can take that vein and connect up portions from here to

(Testimony of Fred Searles, Jr.)

here, and it has got nothing to do with the strike as it crosses the side-line, but what I want to know is the average strike of the vein as it crosses that side-line.

Mr. GRAY.—Don't you think you should confine it to the Lone Pine claim itself, that being the claim that is asserting these rights.

The COURT.—The side-line is a part of the claim.

Mr. GRAY.—Yes, but to the vein within the claim.

Mr. COLBY.—As it crosses it, take it for 300 feet, we will say, so as to limit you, coming in this direction.

Mr. GRAY.—From the side-line.

The COURT.—What is the general strike?

A. The general strike at the side-line is about north 44° west.

Mr. COLBY.—Q. North 44?

A. North 44° east. I do not know why I get these mixed up.

The COURT.—It is about the same on both sides.

A. Yes, sir. It is shown by this working [99] these workings. There is no great diversions.

Mr. COLBY.—Q. And what would its dip be?

A. The strike I gave you was the strike that I exactly observed at the point where it crosses the side-lines, and its dip would be at right angles to that, of course.

Q. In other words, then, if you place a rule at right angles to these various levels here, it would in a general way give you the dip of that vein as it crosses the side-line. Place your ruler in that

(Testimony of Fred Searles, Jr.)

position as I hold it now, at right angles to the strike, and that would give you the dip, wouldn't it?

A. Yes, except that I don't know how accurately that is placed. It is approximately.

Q. I am not trying to fudge or mislead you into anything.

A. Of course I am certain of that Mr. Colby, but I mean it is a question of calculation.

Q. I want to see these conditions because we ordinarily have a model here, a skeleton model from which you can see three dimensions. Here we are testifying from a map on which we have only two dimensions.

The COURT.—What is the dip of the vein?

Mr. COLBY.—Q. What is the average dip?

A. The average dip is about 70°.

Q. 70° from the horizontal. It is a steep vein?

A. A steep vein. [100]

Q. Yes, a steep vein, the quartz is vertical. Now, give me the dip of the Blacktail vein down in the Blacktail claim, where we can all agree that there is a Blacktail vein.

Mr. GRAY.—You tell us where you agree there is a Blacktail vein first.

Mr. COLBY.—Well, Mr. Gray, I would be very glad to admit there is a Blacktail vein from 231 down to 212.

Mr. GRAY.—All right.

Mr. COLBY.—Q. What is the dip of that vein in degrees, and then give the direction of the dip?

A. I have not averaged my observations, but I will

(Testimony of Fred Searles, Jr.)

read off some of the local dips I have taken.

Q. No, I do not want to go into detail, I do not want to take up that time.

The COURT.—State in a general way what the dip is.

Q. About 45 to 50, I should say.

Mr. COLBY.—Q. 45 degrees. As I am laying this ruler, that would about represent the dip, that is in a general way? A. Yes, sir.

Q. This dipping off this way and the other one dipping this way? A. That is correct.

Q. One at 70 degrees and the other at 45, is that correct? [101]

A. Except that instead of one and the other I would say different parts of the same vein.

Q. One portion, we will call it vein to satisfy you, the portion which crosses the side-line of the Lone Pine, dipping at 70 degrees, and the portion of what you call the Blacktail down here in the Blacktail claim in the Blacktail winze, dipping at 45 degrees?

A. I might, however, make this correction, and that is that the portion of the vein over near the side-line flattens very considerably in depth. The dip on the 600 level is only 44 degrees and the dip in the bottom of the Last Chance is also substantially flatter than is the case in the upper part of the vein.

The COURT.—It gets flatter as you go down?

A. It gets flatter; yes, sir.

Mr. GRAY.—It is a good deal like going down the side of a saucer or soup plate.

Mr. COLBY.—Q. I think I brought out the fact

(Testimony of Fred Searles, Jr.)

that no ore has been mined on this portion of the Blacktail north of 231 and beyond the turn of these levels, 100, 200, 300, 400, 500, and 600, as it comes south?

A. I think you have brought it out. If you have not, such is the case.

Q. Another point I want to bring out in that same connection is what is the width of this so-called Blacktail vein as it crosses the east side-line of the Lone Pine?

A. It varies, of course, but is considerable, I [102] should think it was 12 or 15 feet. Possibly in some sections. in fact I know in some sections it is more than that.

Q. And where it comes out to the south end-line of the Lone Pine, it is from 4 to 3 inches, is it not?

A. I do not agree to that.

Q. I think you had a 3 inch exposure there.

A. I had a stringer of it that is 3 inches wide, yes, sir. It is a very substantial vein in the southerly end of the Lone Pine claim of 3 or 4 feet thick, of banded quartz. It has got gold in it, too.

Q. There is gold in most of these veins, too, isn't there? A. I think there is.

Q. There is gold in the discovery vein, isn't there?

A. I don't know.

Q. Would you say there was not from an inspection?

A. I would say that it looked extremely lean and hungry, but I would not say that it does not contain a trace of small value.

(Testimony of Fred Searles, Jr.)

Mr. COLBY.—I think I have about completed this witness, but there might be a few questions that I would like to ask him in the morning. I doubt if there is anything more.

Mr. GRAY.—You can call him back.

Mr. COLBY.—Yes, sir.

Mr. GRAY.—I just want to ask him one question on redirect, and then I am through. [103]

Redirect Examination.

(By Mr. GRAY.)

Q. I want to ask you, Mr. Searles, where it is that you can stand on the surface at the open stope near the contour of 2960 and actually see the bending and turning of that vein and of the banded quartz of that vein, around to have a southeasterly strike? Just mark that on the map.

A. You stand at the point marked G and see the commencement, the beginning of that turn in the open stope itself and can follow foot by foot or inch by inch from the side of that stope down along the cropings of that vein and see the turn which is not entirely referable to the fact that the vein is transverseing the hillside. The vein itself turns, the structure turns, so that the red line is referable only in part to the fact that—

The COURT.—I understand that part of it. Down to what point?

A. The vein turns all the way.

The COURT.—I say down to what point did you trace it?

(Testimony of Fred Searles, Jr.)

A. You can trace it continuously to a point in the gulch there.

Mr. GRAY.—Mark it G-1.

A. Mark it G-1.

Q. That can be seen to-day, can't it?

A. It can be seen to-day.

Mr. GRAY.—That is all. [104]

Mr. COLBY.—Q. As a matter of fact, Mr. Searls, isn't there a break in the quartz as you go up that trench, so that for a certain portion of that distance you have pointed to there is no quartz?

A. Absolutely there is not. I followed continuously on quartz and banded vein through that distance.

Mr. GRAY.—The reason I asked that question is that if there should be a disagreement between us as to what one can see with the eye, we may request your Honor to go and look at it yourself. That is all, Mr. Searls.

Witness excused.

The COURT.—It is about the usual hour to adjourn, the Court will now adjourn until to-morrow morning until 10 o'clock.

(Thereupon an adjournment was taken until to-morrow, Tuesday, August 24th, 1920, at 10 o'clock A. M.) [105]

10:00 A. M., August 23, 1920.

Court convened pursuant to adjournment; present as before.

(Testimony of Fred Searles, Jr.)

FRED SEARLES, Jr., resumed the stand for further cross-examination, and testified as follows:

(By Mr. COLBY.)

Q. The positions of these trenches are approximately as you testified yesterday, with the exposures as shown in them placed in there so that they are relatively in the same position on this sketch as on the one of similar scale?

A. They are. I, of course, did not make the survey myself as to the location of those trenches, but I think it is correct, and the mapping of the quartz in them is correct with relation to the position of the trenches.

Mr. COLBY.—That is all.

Witness excused. [106]

Testimony of Jerome J. Day, for Plaintiff.

JEROME J. DAY, called and sworn as a witness on behalf of the plaintiff, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. Will you state your name, residence and occupation?

A. My name is Jerome J. Day; residence, Moscow, Idaho; occupation, miner.

Q. What relation have you to the plaintiff in this case?

A. President of the Northport Smelting and Refining Company.

Q. When did you acquire the Lone Pine Mining

claims? A. In the year of 1916.

(Testimony of Jerome J. Day.)

Mr. GRAY.—By the way, Mr. Colby, it is denied in the answer that we are the owners or acquired it at that time, and if you are willing to admit—

Mr. COLBY.—Yes. The only reason for my denial was that we did not conform to the date of the acquisition of title.

Mr. GRAY.—I have the exact date here, and will give it to you in a moment.

Q. Have you had charge of the property ever since the Company acquired it? A. I have.

Q. I wish you would briefly tell the Court how long an experience you have had in mining, and in what capacities.

A. I started underground work as a practical man in 1891 or 1892, and have been continuously engaged in that occupation in its various forms from a practical standpoint since. [107]

Q. Have you prospected? A. I have.

Q. Developed mines? A. I have.

Q. Other than this mine at Republic, have you developed any other mines, Mr. Day?

A. Notably two, the Hercules and the Tamarack.

Q. Both of them are large producing silver-lead mines in the Coeur d'Alene mining district?

A. They are.

Mr. GRAY.—The date, Mr. Colby, of the acquisition, as shown by the abstract, is the 17th of July, 1916, by Mr. Day.

Q. You acquired this for the Northport Smelting and Refining Company?

A. I did. It is our usual procedure of acquiring

(Testimony of Jerome J. Day.)

property for one to take the title until all details are finished.

Mr. COLBY.—That is all right, we are not disposed to question the title.

Q. Mr. Day, I want you to briefly show the Court what work you did after acquiring this property for the purpose of developing?

A. After, we might say, a preliminary examination of the surface and such workings as were open and available, we drove out—this crosscut was run out somewhere in the neighborhood of the side-line of the Pine.

Q. By this crosscut, you mean this 300-foot crosscut?

A. On this 300-foot level.

Q. From station 190 to Station 161?

A. It was driven out to somewhere in the neighborhood [108] of the side-line. We continued that operation until we intersected what is apparently the Pearl vein. Some work was done along that. We drove out from the 400-foot level, crosscut in this direction.

Q. That is in a southwesterly direction?

A. In a southwesterly direction.

Q. From approximately northeast of Station 204?

A. Yes.

Q. To—

A. To 206, to a connection apparently with the Surprise vein. We drove from the 500 and from the 600-foot level several diamond drill holes having northerly and southerly directions. In none of this

(Testimony of Jerome J. Day.)

work within the Pine vein—

Q. Within the Pine claim.

A. Within the Pine claim do we find anything that would indicate a vein of commercial ore either in the diamond drill holes or in the drifts. [109]

Q. Now, before we go any further, you spoke of those as crosscuts, the four hundred particularly, it looks as if it is in the same direction as the drift upon the vein farther northeasterly.

A. As a term it is interchangeable with practical men, with very little distinction.

Q. You speak of the crosscut, did that follow a vein out?

A. It did not, from nothing except little quartz stringers in it.

Q. Did you follow those quartz stringers, or did they cross?

A. They apparently cross.

Q. Approximately as shown by the little lines on the map, Exhibit No. 2. A. Yes, sir.

Q. Now, did this 300 crosscut from 190 to 161 follow a vein? A. It did not.

Q. Let me first ask you, what were those driven for with the diamond drill?

A. To explore the ground out in here.

Q. That is, in the southwesterly corner of the Pine claim?

A. In the southwesterly corner of the Pine claim.

Q. Following that work what did you do and what was the reason for it?

A. I directed work to be carried on on the surface

(Testimony of Jerome J. Day.)

to trace any vein or veins that might be in that ground to get assistance to find them underneath the surface.

Q. You say to get assistance in finding them underneath the surface? [110]

A. To find out where the apex of any possible veins was.

Q. That was following the work in these crosscuts which did not disclose any vein in the southwestern corner of that claim? A. Yes, sir.

Q. What kind of work did you direct there and what did that work disclose?

A. I gave instructions that they sink pits upon any quartz showing that they found; later to connect those pits by trenches.

Q. Just point out to the Judge, then, what was done—and perhaps we had better go to the surface map for that.

A. Starting here at the end of what we term the stopes or where the stopes come to the surface—

Q. Marked “Open Stope” near Station 544?

A. Yes, sir, approximately in that point open pits were sunk; later connected up; following that continuously around to where we came into the gulch, at which point the wash is apparently quite deep. We then crossed the gulch and sunk pits close to a tree and along up across this end-line continuously, and later connected up either by trench or by tunnel.

Q. Mr. Day, right there will you state to the Court why you did not develop that vein across the bottom of the gulch?

(Testimony of Jerome J. Day.)

A. At this point there is considerable of a gulch coming down there that brings in quite a water shed. In breaking through there, in stoping, in seal, that might be caused by clay, that would necessarily by breaking that allow the surface water to go into these diggings. Any work that is done there must be carried on [111] with the idea that at this point directly below that gulch will probably have some connection with the surface such as water drainage—a watercourse. In the old workings all through here there is quite an amount of open ground, ground that is not filled, and it is connected up. Stopes in the Pine claim here are approximately 600 feet deep with very little or no filling. The levels are run out and the ore is extracted from the 200 down to the 600. It is extracted to bring into those workings surface water which would be a great detriment in future operations.

Q. The ground between those levels has been worked out? A. Pretty well worked out.

Q. There are large areas of open ground?

A. Yes, sir.

Q. The opening up of that in the bottom of the gulch, then, in your judgment, would endanger the flooding of the property?

A. It has that possibility.

Q. Now, then, Mr. Day, I want you to describe as a practical miner from your own observations of your work as it was going on and as it is to-day the tracing of the apex of this vein.

A. Starting on the 600 level on the Pine claim

(Testimony of Jerome J. Day.)

it comes continuously to the surface upon the vein except where the ore is removed by stoping, you can follow continuously around on this vein to this point here.

Q. Let us try to mark that.

The COURT.—To the gulch.

Mr. GRAY.—Point G1.

A. All right, point G1. Followed continuously upon quartz, vein matter, plainly to this point. You can go directly across the gulch, follow along with one slight interval across [112] the end-line of the Pine claim directly up to the Black Tail openings.

Q. In your judgment is that vein continuous around that bend and to the south end-line of the Pine claim? A. Beyond a doubt.

The COURT.—How far does the vein extend in the other direction?

A. From what point? This way?

The COURT.—Yes, sir.

Mr. GRAY.—Northeasterly.

A. I have been in the workings on the 200 that apparently extend well over into the Last Chance ground. It has been a number of years since that was worked and it is in a more or less of an abandoned condition.

The COURT.—All these workings in the Last Chance are a part of the same vein?

A. In my judgment, yes, sir. You can go directly through them, a physical connection there.

Mr. GRAY.—Have you traced the vein at all

(Testimony of Jerome J. Day.)

beyond the Last Chance? A. I have not.

Q. Now, coming back again to this surface map. You say the vein continues around there, and the quartz continues around. What is the fact as to your being able to observe the bending of the banded quartz within that vein?

A. That would follow closely the bending of the walls of that vein. Coming around there it is very noticeable to see.

Q. Where you last observed the vein at about the point G1 on the north side of the gulch, what direction has the vein and the banding of the vein? [113] A. A southerly direction.

Q. Where you last observed it on the south side of the gulch, what direction has the vein?

A. A northerly direction.

Q. What is the fact as to the vein at those two points pointing to—

A. Apparently directly opposite and pointing to each other.

Q. Now, coming down again to the Black Tail claim, you have said that in your judgment this vein continues on down to the Black Tail. There is an area through the northern portion of the Black Tail claim which is dotted upon the map where the vein is not developed. In your judgment as a miner, is there any question about the continuity of the vein from T-875 to the south end-line of the Lone Pine claim? A. There is not.

Q. Was this work, this trenching and the digging of these pits, prior to any litigation?

(Testimony of Jerome J. Day.)

A. Absolutely.

Q. Was it for litigation purposes?

A. It was not; solely for development purposes.

Q. To locate your—

A. To locate the ore bodies. [114]

Q. Was there anything that you observed to indicate anything concerning this vein other than the banding, as you have described it there, any faulting?

A. No, not such as are noticeable to a practical man.

Mr. GRAY.—You may examine.

Cross-examination.

(By Mr. COLBY.)

Q. As I understand, Mr. Day, you are testifying as a practical miner? A. Yes, sir.

Q. Did you take any notes underground?

A. I did not.

Q. During your observation? A. No.

Q. What is your relation to the plaintiff company? A. President of the company.

Q. How long was it after you acquired the Lone Pine claim that your company or some of your representatives attempted to acquire control of the Last Chance?

Mr. GRAY.—I think that is immaterial.

Mr. COLBY.—I think that has a bearing upon the motive of the witness and the weight to be given to his testimony.

The COURT.—Proceed.

A. To my knowledge, no man in authority

(Testimony of Jerome J. Day.)

negotiated for the Last Chance at any time.

Mr. COLBY.—Q. There was no attempt to purchase control of the Last Chance? [115]

A. Not so far as I know. As a matter of fact, refusal of stock tendered has been made.

Q. And when did you first get the idea that the Last Chance people were mining on ground that belonged to you?

A. Not until after these trenches were completed.

Q. And when was that? What date?

A. I don't know, say something approximately a year ago.

Q. That must have been more than a year ago.

A. It could have been. I had no idea of litigation and I am not fixing a time as to that.

Q. How long before the suit was filed did your company have the idea that the Last Chance people were—

A. (Interrupting.) Very shortly. As soon as we determined in our judgment that they have turned and crossed that line, crossed there—(indicating).

Mr. GRAY.—That is, crossed the south end-line?

A. Crossed the south end-line and crossed the east side-line. We gave notice immediately.

Mr. COLBY.—Q. And when you first took possession of the Lone Pine, you had no idea that the Black Tail vein ran into the Lone Pine?

A. Oh, no; I wouldn't say that.

Q. You didn't know where it ran? A. No.

Q. You didn't think that it made a junction with the other vein?

(Testimony of Jerome J. Day.)

A. I had no idea upon it when I purchased the Pine.

Q. Well, what is this vein here that has been stoped so extensively in the Lone Pine—what was that called at [116] that time?

A. All I know is the Pine vein.

Q. That was the main Pine vein?

A. No. In all our reference to it, I don't know as we ever designated it here or designated it as anything but the Pine vein.

The COURT.—Q. That was the only vein that was ever worked in the mine was it?

A. So far as I know.

Q. Where was the work on the Last Chance, where was the mining done on that?

A. Across from over here.

Q. That work was done by the Last Chance?

A. Yes.

Mr. COLBY.—Everything that is underneath the surface was done by the Last Chance.

Q. Have you been in other workings of the Lone Pine claim, any other workings?

A. Why, I have been around on the surface, been in the tunnel that runs off of No. 1.

Q. I believe you stated to his honor that there was no other mining done on the Lone Pine claim except upon this Pine vein?

A. Not to my knowledge.

Q. Did you examine the workings in No. 4 vein?

A. No. 4 vein?

A. Yes.

(Testimony of Jerome J. Day.)

A. I don't know what No. 4 vein is.

Q. You don't know No. 4 vein? A. No. [117]

Q. Never heard of it? A. No.

Q. Then I will point to this vein here which passes through points 152, 153, and 128-C, the veins in that vicinity; did you ever see any work done on these? A. Yes, sir.

Q. Mining? A. Some stoping done in there.

Q. Then there was stoping done on the Lone Pine? A. Yes.

Q. In other places than the main Pine vein?

A. Yes, sir. And in this vein here.

Q. Now, you stated, I believe, that the reason that you did not turn any of these workings and cross into the Black Tail was the fact that you might get under that watercourse?

A. No, I didn't state that.

Q. What was your statement?

A. My statement was the reason I didn't connect that was to get that surface water.

Q. Now, if you had the Black Tail vein on any of your workings underground here, why didn't you turn the 600 level?

A. Why, if there was any pay ore there—or to put it in another way: The principal reason for mining this is for silica for the smelter rather than for its mining value. It carries an appreciable amount of both gold and silver, but is such a low grade ore—and we only mine such ore as the smelter requirements necessitate. At the present time we are getting it from the Quilp.

(Testimony of Jerome J. Day.)

Q. And yet in each of these levels, did you turn into [118] what you call the Lone Pine vein?

A. Well, we are on it all the time.

Q. On the Black Tail vein, I should say.

A. Well, we are on the Black Tail.

Q. Where do any of these levels which you have been working along show any turn to the southeast to connect up with the direction of the Black Tail vein as shown in the Black Tail claim?

A. Right at that point.

Mr. GRAY.—Name it.

A. It is this point here; it is marked 57 Star. We will say westerly from point 179.

Q. What is the direction of this quartz in there at that point?

A. I can't give the direction, but it has a southwesterly swing to it.

Q. Wasn't that a variation that would occur in any vein?

A. No, I can't say it would occur in any vein. It occurs in this vein.

Q. Why didn't you, in the interests of this litigation, turn that working and follow over into the Black Tail claim?

A. How much would you estimate it would cost to drive across there?

Q. You don't need to drive across. A few feet would show the direction of that.

A. I think it is sufficiently shown there.

Q. And you think that is stoping in the direction of the Black Tail vein? [119]

(Testimony of Jerome J. Day.)

A. I think it is; from a practical standpoint, yes.

Q. Now, we have another working up here passing through point 343 and extending to the east. Does that follow a vein?

A. Hardly what you would call a vein from a practical standpoint.

Q. What do you call that? A. An exposure.

Q. Does that indicate a turn in the direction of the Black Tail, in your opinion?

A. Not at that particular point.

Q. Now, how much ore did you ever take out of the workings in a direction southeast, extending southeast? A. I don't know as I can give it.

Q. In any workings beyond the stopes and the mining that appears on these various levels, 200, 300, down to 600.

A. I would say that all of the ore on the 600-foot level, all that has been mined from the 600-foot level; practically all that has been mined from the 500-foot level; some of the ore up in here—

Mr. GRAY.—Out in where?

A. Some of the ore above the 400 level—as I remember, the 500 shaft was down to the 500 level when I purchased the property and some stoping done over here.

Q. I don't believe you got my question. My question is; ignoring the mining that has been done in the general trend of these various levels, from the 100 down to the 600, where have you mined any ore in the Lone Pine that has turned in the direction of the Black Tail? [120]

(Testimony of Jerome J. Day.)

A. It has all turned. That is what I am answering your question. With the 600 here from the shaft down here, is in the direction of the Black Tail.

Q. Isn't that a very decided angle as compared with the Black Tail vein over in the Black Tail ground? A. I don't know.

Q. I say beyond this parallel direction, to the south, and turning to the southeast, where have you mined any ore?

A. I think at a point approximately 219. [121]

Q. In all your exploration, then, beyond these various levels as they are shown on this map colored in red extending to the southwest, you have not taken out any commercial ore, have you?

A. Beyond the extremities of these levels?

Q. Yes. A. No.

Q. Have you seen these cuts on the surface, T-840, T-839, T-838 and T-901?

A. I have seen cuts at approximately this point upon the ground.

Q. And what is exposed in those cuts?

A. At this point there is considerable quartz.

Q. What is that point?

A. That is, we will say, taking that point means the intersection of the blue line with the black line of T-840.

Q. It is right on the west side line of the Lone Pine?

A. The Lone Pine, yes. I would say that there is about 24 inches of quartz there and other matter

(Testimony of Jerome J. Day.)

right on the surface close to the railroad.

Q. What did you find in T-839?

A. Lesser amount of quartz.

Q. And T-838? A. Lesser.

Q. And in T-901? A. Very little, if any.

Q. Now, as a matter of fact, doesn't that quartz increase in width as you go northeasterly?

A. No.

Q. You don't agree, then, with this 10-foot detail map?

A. I agree that there is quartz showing here, to my [122] judgment 2 feet.

Q. Two feet.

A. That there is lesser quartz here.

Q. And you do not agree with the coloring that has been placed upon the ten-foot detail?

A. Not as I saw it. And at this point here.

Q. Where is that?

A. I located that practically under a timber-shed.

Q. That is at the extreme northern part of these pencil cuts that they have put on here?

A. Yes. Very little quartz.

Q. And what is the general direction of that quartz exposure through those trenches?

A. I would say northeasterly.

Q. It is approximately parallel, is it not, with what you called, when you first went on the Lone Pine ground, as the Pine ground, as the Pine vein?

A. Parallel?

Q. Yes, in strike. A. No.

Q. You would not call it so?

(Testimony of Jerome J. Day.)

A. No. The strike of the Lone Pine, when I went on it was known then up to the open stopes had more of a bearing to the north, or this one bore more to the north than the Pine, looking at it from this direction.

Q. The strike of the Pine vein is shown in the No. 200 level, is it not? The general strike in that vicinity is shown by the direction of the level, isn't it? A. The 200?

Q. Yes. [123] A. Yes.

Q. Will you place your pointer right along that level. A. Taking it from this point to—

Q. No, you have the 100.

A. No, this is the 200; that is the 100 there. That would be we will say to this point here from the side-line, the direction of the strike.

Q. Isn't that approximately parallel to the exposure you have got in the cuts?

A. No, not at all; the exposure in the cuts will show considerable difference.

The COURT.—The map, of course, speaks for itself.

A. Yes. The red ink will show the different points.

Q. Now, as I understand it, you asked your employees to open up quartz wherever it showed on the surface.

A. Not wherever it showed. Wherever they had good showings.

Q. Why didn't they open up the quartz that was shown in these trenches?

(Testimony of Jerome J. Day.)

A. In here (indicating)?

Q. Yes.

A. Because it was exposed in a railroad cut there.

Q. And you were not interested in having it opened up as it went into the Lone Pine claim and approached these other workings?

A. Not directly interested one way or another. I think that is all that is in sight is there. All that there is is practically there.

Q. You think that showing there is limited merely to [124] these particular trenches, and it does not go down?

A. I would not say that it does not go down.

Q. It does not extend in either direction?

A. Oh, I don't think it extends any considerable distance from those cuts.

Q. You are only willing to testify to what you actually see? A. Actually see.

Redirect Examination.

(By Mr. GRAY.)

Q. In connection with that there is one question I would like to ask. As a matter of fact, in which direction did you start that surface work from that open trench, and what did you find?

A. We started virtually from the open stope and followed quartz clear down to the gluch.

Q. So that what you followed there was the vein?

A. It was.

Witness excused. [125]

Testimony of James C. Ralston, for Plaintiff.

JAMES C. RALSTON, called and sworn as a witness on behalf of the plaintiff, testified as follows on direct examination.

Direct Examination.

(By Mr. GRAY.)

Q. Will you state your name, residence and occupation?

A. J. C. Ralston; Spokane; mining engineer.

Q. Mr. Ralston, where were you educated for the practice of your profession, and what experience have you had in its practice?

A. After taking a course in civil engineering, in about 1906 or 1907, I began the study and the practice first, of mine surveying, which, of course, led immediately into the simpler forms of mine engineering, and from that on through to the present day, on studies and examinations and professional work in all of the western mining states, or practically all of them, including British Columbia, covering a period of about 20 years.

Q. The character of that work, Mr. Ralston, just in a general way, has it been in the development of properties and advising concerning development and investigation of them and so forth? Just state in a general way the character of the work that you have done.

A. Very largely in examinations, in advisory work, in operation and in development, particularly in development, and attendant work looking to the

(Testimony of James C. Ralston.)

opening of mining properties and the developing of them in different camps.

Q. Have you ever been a deputy mineral surveyor? A. Yes. [126]

Q. And as such had occasion to survey claims for patent and observed them upon the surface?

A. I have.

Q. How long have you been acquainted with the Republic district? A. Since the spring of 1897.

Q. And how long have you known the Lone Pine Mining claim? A. Since the summer of 1897.

Q. How did you happen first to become acquainted with that property?

A. I was the engineer for the Republic Mining Company, and negotiations were evidently in hand for the purchase or acquisition of the Lone Pine properties, and as the engineer for the Republic people, I was requested to go up, look it over, and make some surveys and ultimately make surveys for patent.

Q. And you did that, you say, in the summer of 1897? A. Yes.

Q. When you first went there, who went with you, if you remember? A. You mean over the ground?

Q. Over the ground.

A. Well, the owners or the locators of the property, that is, of the Lone Pine property.

Q. Their names.

A. Such as Mr. Phillip Creasor and Mr. Tom Ryan, as I recollect. I am not quite so sure of Ryan being along, but it is my recollection that he was. [127]

(Testimony of James C. Ralston.)

Q. That was prior to the time you made your official survey?

A. That was looking over the ground to familiarize myself with the location of the property in general and its location stakes.

Q. Who pointed out the property and the stakes and the objects to be observed upon it at that time to you? A. Mr. Creasor, principally.

Q. Now, Mr. Ralston, subsequently you did make the official survey of that claim for patent?

A. I did.

Mr. GRAY.—Mr. Colby, I want to introduce in evidence the field-notes and the copy of the plat as well as the copy of the location notice.

Mr. COLBY.—Where did you get your field-notes?

Mr. GRAY.—I got them from the surveyor-general.

Mr. COLBY.—I have the patent record.

Mr. GRAY.—I might introduce that?

Mr. COLBY.—Yes, and you won't have to introduce your location notice or your field-notes. The only thing is the plat, and I haven't the plat.

Mr. GRAY.—Then I will offer this. There may be things in the patent record I do not care to vouch for.

Mr. COLBY.—Sure.

Mr. GRAY.—But the patent record and the official plat. I say to you, Mr. Colby, and to your Honor that this is the amended plat. There is no difference between the original and the amended, ex-

(Testimony of James C. Ralston.)

cept that the conflict between the Last Chance and the McCawber was claimed in the original and excluded in the amended. [128]

Mr. COLBY.—It has nothing to do with this case?

Mr. GRAY.—It has nothing to do with this case. It is an amended survey, because in the first survey, they claimed a conflict with the McCawber. It had gone to patent, and the surveyor-general required them to exclude it. Those may be marked as our exhibits.

(Patent and plat marked Plaintiff's Exhibits 11 and 12, admitted in evidence and are made a part hereof.)

Mr. GRAY.—Q. Now, Mr. Ralston, without the necessity of my questioning you on what you observed there, will you state to his honor, how you approached that claim and what you observed with reference to the presence there of any vein or veins, and their apparent course, what croppings if any, were shown upon the surface of the ground and seen by you at that time?

A. After having gone over the property to ascertain the location of the various original stakes, we then proceeded to go over the general hill, ascertaining first the location of the end-line stakes. It seems that it is a requirement of the Federal law to lay down a theoretical lode line. Sometimes that lode line is defined by stakes, sometimes by works on the ground, and sometimes by a combination of both. And in order to lay that line intelligently, it was necessary to ascertain all of the physical facts

(Testimony of James C. Ralston.)

on the ground in connection with the staking. I therefore looked up the discovery as marked on the official plat, the discovery improvement No. 1. We looked up the end-line stakes and follow over the ground substantially along the territory which [129] would be defined by the lode line through here (indicating). At the north end, from the north end-line stake standing somewhere about where I hold my pointer, in the center of the north end-line, and for a distance of perhaps 150 feet south, a rather sharp bit of topography is defined as shown by these contour lines, such as a man on the ground might call a hog back. At the lower or southerly end of the most prominent part of that feature of the topography some quartz and what appeared to be typical croppings of vein matter appeared, and fitted rudely the general direction of a straight line drawn through the center of the claim. Still further croppings were to be found perhaps in the vicinity of the Letter "N" of the word "Lone." Still others again as the discovery cut was approached in the form of apparent croppings under old large trees, some of which stand to-day and others are down, and so on down to the discovery, continuing along that line on the theory of seeking to ascertain a justification for a lode line in that particular territory, viz., the center of the vein. Croppings were noted at a point westerly or perhaps northwesterly of the southwest end of the open stope.

Q. Just point that out.

(Testimony of James C. Ralston.)

A. That would be in the vicinity of No. 545.

Q. Also mark 203-C? A. Yes.

Q. On Exhibit 1. What kind of a cropping was that?

A. That was rather a strong quartz cropping, and that was the last of any physical evidences of anything which would justify the definition of a lode line. The [130] rest is wash and gulch, but it constituted in my judgment, sufficient evidence to lay with a good deal of confidence a lode line substantially as it has been laid, defined as being the general direction of the vein.

Q. Was Mr. Creasor at these various places at one time and another with you in your visit?

A. I think so.

Q. This cropping—I want to call your attention to the cropping near the open stope. Was that observable for any distance from there.

A. Yes, quite a distance.

Q. Where can you see it?

A. Well, this is the whole—as these green contour lines show, this is a hill sloping southerly, and is visible from the territory further south in looking north.

Q. That is, from the Black Tail?

A. From the Black Tail, almost from any point on the Black Tail vein. It is particularly visible from the old Black Tail croppings. As for instance, in sighting along over here, from the extension of the Black Tail into the Lone Pine, one may see this whole face of the hill from about this point,

(Testimony of James C. Ralston.)

namely 578 on up to substantially the top of the hill, or near the discovery cut; and at the present time also you can see these workings.

Q. Can you see those croppings to-day?

A. These croppings are rather conspicuous and can be seen quite plainly.

Q. Those croppings I understood you to say are quartz? [131] A. Yes, sir.

Q. Coming back again to the Black Tail, could you observe the croppings at that time of the Black Tail vein going up northerly or northwesterly through that claim? A. Yes.

Q. Are they observable to-day, Mr. Ralston?

A. Quite conspicuously.

Q. What do they consist of? What is the character of that cropping there?

A. Well, they are croppings largely of quartz, some vein matter well defined along the side of the hill in the form, in many cases, of the little miniature escarpment there, 3 to 5 or 8 feet high, breaking the average slope of the hill enough to define this plainly. [132]

Q. Then at the time, as I understand it, at the time you made your patent survey, there was known and observed by you and by the others who were there the croppings at 203-C and at the point marked discovery cut and on up at various places toward the north end of the claim? A. Yes.

Q. Therefore, I leave that, Mr. Ralston. What was your opinion at that time as to the course of the vein?

(Testimony of James C. Ralston.)

A. That it was a north-south vein or substantially north-south, a continuation in other words of the Black Tail.

Q. Did you know the name of the claim lying to the south of the Black Tail?

A. The claim south of the Black Tail at that time?

Q. Yes, sir. A. I have forgotten.

Q. All right. Have you prepared a map of the claims in the Republic district at any time.

A. Yes, sir.

Q. Have you had that enlarged so that a copy of it is here in court? A. Yes, sir.

Q. Will you mark this Exhibit No. 13. This is marked "District Map of the Eureka Mining District." The small map from which this has been prepared was originally compiled by you?

A. Yes, sir.

Q. Won't you point out to his Honor the claims in question here?

A. Here is the Lone Pine, Pearl, Surprise, Black Tail, Last Chance (indicated). [133]

Q. That map shows the claims as they have been laid out and patented in that district?

A. It does. Q. Where is north?

A. North is right up at the top of the map.

Q. At the top of the map. What is the general course of the veins in the Republic camp in Eureka Mining district as you know them?

A. The general average course of the veins in that part of Republic camp known as the Eureka Creek district all have a slightly northwesterly direction;

(Testimony of James C. Ralston.)

that is to say, northwest and southeast. They are represented pretty generally by the direction of the claims. The fact is that in my judgment there are few camps in the country where the location of the veins and the locations as laid on the ground have been so intelligently and well done and later development has tended to disturb least. These define very well the direction of those veins.

Q. Now, Mr. Ralston, at the time you made your patent survey was there any work done upon the Lone Pine claim?

A. Yes, the principal piece of work was a tunnel.

The COURT.—Was the patent survey work done at the same time you spoke of in 1897?

A. The original patent survey work was done in 1897 and amended in 1898, I think it was.

Mr. GRAY.—That is what it shows in the field-notes?

A. I have forgotten.

Q. It is shown in the field-notes, the original in July 1897 and amended in 1898?

The COURT.—I just simply wanted to know the date you had [134] reference to is all, whether 1897 or 1898.

A. The amended survey of the year later or thereabouts is more of an office matter of calculation excepting—

The COURT.—I don't care, only for the dates to which Mr. Gray refers.

Mr. GRAY.—Mr. Ralston, where was this work done at the time of the patent, on the Lone Pine, just

(Testimony of James C. Ralston.)

show it to his Honor, will you please?

The COURT.—Can you point it out on the map?

Mr. GRAY.—Show it here.

A. It is that part of the yellow colored tunnel the portal of which begins near a point marked 519 and extends in a direction substantially parallel to the claim for a distance of about 150 feet or thereabouts, somewhere about to a point a short distance north of the so-called open stope or to that first cross red line on the yellow tunnel.

Q. What other work was done there at that time?

A. The discovery cut and a shallow surface cut at a point marked "Discovery Trench." It is a short trench perhaps a couple of feet wide and perhaps 10 feet long.

Q. How deep?

A. I should say not to exceed 1 foot. The bedrock crops practically at the surface and it is a mere digging out of the debris and rough edges possibly to define what could be defined merely as a trench.

Q. Now this work at this first tunnel was done from out of the point marked Pine 100, wasn't it?

A. Yes.

Q. On surface exhibit 1? A. Yes. [135]

Q. And pointed towards the croppings that you have heretofore described to his Honor approximately?

A. Yes, running approximately toward these croppings.

Q. Now, passing your official survey, what has been your subsequent acquaintance with this property?

(Testimony of James C. Ralston.)

A. Since the survey for patent I have been upon the ground a great many times, looking it over, following the developments as one naturally would who is interested in seeing the developments of that part of the country and of late going up and looking over the property again at the request of yourself.

Q. That was for the purpose of this lawsuit?

A. For the purpose of this lawsuit, yes.

Q. Since this lawsuit was started you have carefully examined, have you, that ground and all of the workings which are open? A. I have.

Q. I want you to state to his Honor, without going into detail as to workings, what you have found with reference to the position of the vein there as it is now developed and its relation to the lines of the Lone Pine claim.

A. In a word, I think I can summarize that by stating that after following through the developments, both on the surface and underground, seeking to trace out the continuity and identity, I have come to the conclusion that the vein in question is defined on the surface substantially as shown on Plaintiff's Exhibit 1, viz., in red, where it crosses the south end line of the Pine and continues by being delineated in red, both solid and broken through various surface workings, swinging around in a northeasterly direction past certain open [136] cuts, so marked, and open stopes to the intersection of the east side-line of the Lone Pine claim.

Q. At station?

A. That is at station marked 542.

(Testimony of James C. Ralston.)

Q. Just go on and state the character of the vein as you observed it around there and what you observed with reference to the bending of the vein.

A. The vein at the surface as developed largely by the breaking through of the stopes from the lower levels shows itself to be a well defined, conspicuous vein, having strong—at least a very strong footwall clearly susceptible of a continuous following and in width from perhaps three or four feet to six, seven or eight in many places and can be followed as I have stated around this red line partly or I might say wholly first by the croppings and conjointly with the workings to the vicinity of a trench, open stope so-called on this plat, where a decided curve is found swinging and carrying the vein around to a southerly direction. So strong, in fact, are those lines of the curve, that at first I was disposed to think they must be a series of intersecting features; but on careful examination of the wall, and particularly the footwall it showed so clearly I found, especially in the vicinity of the works, open stopes, it is a well-defined surface as clearly to be followed and seen as the wall behind your seat.

The COURT.—At what point could you so follow it?

A. All the way through from the opening seen at T-897. There is a stope there which terminates up here and you can see by looking in that stope there, you can see by looking in underneath through the large open stopes, and see this [137] wall quite

(Testimony of James C. Ralston.)

plainly from that point or from any point along the big open stope itself.

Mr. GRAY.—Running to where, south?

A. Running to a southerly point down and under the line which defines the southwesterly end of the so-called open stope. For instance, somewhere near where I hold my finger on there, about halfway between 2920 and 2940 or perhaps one-third of the way between these two contours. The west end of that stope ends or continues on down to the 200 level but at the surface from that point on the trench as shown by this full black line may be followed and in that trench may be followed the vein as shown here in red on around through the curved workings and followed with a great deal of precision to the line of separation clearly between the vein and its enclosing footwall country can be traced quite as definitely as we would trace the distinction between the edge of this carpet and the oak floor on which it rests.

Q. And then around to what point?

A. Around to the southerly end of the open cut at 552.

The COURT.—That is in the gulch is it?

A. Nearly to the gulch. Here an old trail passes through the opening between the end of that cut to 552 and the beginning of the next smaller cut marked G1. There again the vein is traceable down for $\frac{2}{3}$ of the distance of that cut, the last quarter of which or the last one-third of which is in silt and debris and so the vein at that point is seen to pass under the wash of the gulch and so is lost to definite sight so far as

(Testimony of James C. Ralston.)

the lower end of that cut is concerned. Then going across the gulch proper, that is the very bottom of the gulch which is filled with wash and a little trickling stream, and up on the other side, or slightly up—only a few feet— [138] we encounter the northerly end of the trench which is marked T-843. Here again the vein is found quite as clearly defined within the enclosing country rock and may be followed up through that trench more or less continuously to the end line.

Q. Is there any question as to the identity of the vein in T-843 and the identity of the vein as you leave it at G1?

A. Not to my mind, no. It has all the physical characteristics, one similar to the other and satisfy those ordinary demands of identity which I would say are ordinarily employed by the miner or the engineer in seeking to make identification.

Q. Coming south, to the south end-line of the Lone Pine claim, have you observed the vein as developed in that end line trench and tunnel? A. I have.

Q. In your judgment is that the same vein which you have followed and described around the bend?

A. Yes, without any question. It is true it is slightly broken but there is no question in my mind as to its identity. It is the same typical vein matter or vein stuff.

Q. Mr. Ralston, will you just follow that vein on to the South if you can do so?

A. South of the Lone Pine end-line for a distance of possibly 80 or 90 feet—90 feet say—the ground is

(Testimony of James C. Ralston.)

covered with a thick hillside wash obscuring the bedrock and any croppings which might exist if the washings were eroded or carried or wheeled away; but at or in the vicinity of T-875 or at T-876, T-883, T-886 I believe and so on down as shown by the red line the vein may be traced with the same [139] ease that it has been traced on the Lone Pine.

Q. Is that the same vein in your judgment?

A. Yes, sir. I think there is absolutely no question whatever but that is absolutely the same vein. It has all the elements of identity, common characteristics, dipping roughly about the same, certainly pointing in the same direction and lying in about the same general plane.

Q. Mr. Ralston, have you traced this vein downward so as to be able to state whether or not it does extend downward from the apex in the Lone Pine which you have described to meet the surface of the Last Chance mine?

A. I have followed it from the surface as you say to the lowest level shown on these plans, viz., 600.

Mr. COLBY.—We don't deny that point.

A. I made such a tracing and have also followed out in a general way the existence and verified for myself the existence of the vein within the various workings from the 600 up to the surface and within these workings, so far as they extend or so far as the vein shows within the workings both to the north and to the south.

Q. Now, with reference to the character of that vein and its banding, will you just briefly discuss that

(Testimony of James C. Ralston.)

to the Court and describe it to the Court as you observed it?

A. Well, when I spoke a moment ago of earmarks and characteristics, I mean by that first that the appearances of the quartz within the vein has rather the same individual and distinctive nature by reason of the banding of the quartz itself as it lies in position and as it lies, for instance, against the footwall. The footwall, on the other hand, is noticeable and definite by reason of the separation and by reason of the color and character of the footwall country as against the quartz [140] or ore material or vein stuff; so that the line of separation is not only observable from the standpoint of what I have described, but has as a rule a blanket, a thin sheet or thin blanket of so-called *gogue* which further constitutes an element in the separation of the vein from the country rock. Aside from these general earmarks, it is true that with respect to that vein and all veins, there are certain general earmarks which may not always be susceptible of oral definition, but which are undoubtedly elements to be clearly seen and observed. So that the whole combination makes a picture in a man's mind such that he clearly sees that vein and can clearly identify it within the general limits of identification as a vein within a limited area such as this under discussion. So that the vein, I think, may be clearly defined and clearly recognized for the extent to which it has been developed. [141]

Q. Mr. Ralston, I directed Mr. Searles' attention to the conditions as they exist to-day, and I desire to

(Testimony of James C. Ralston.)

direct yours. Can one stand at the northerly end of the open stope which extends northeasterly from Station 544 and observe the bending of the vein and the bending of the bands within the vein from there around the turn where it changes *it* course?

A. Yes. You can very clearly so far as the open void is concerned, the open space there, one may stand and place one's arms in this direction and set a parallel to the distinction of that course so clear or so conspicuous and so one might say almost uniform in sweeping around without any interruption.

Q. Now, let me ask you another thing. Is it unusual in your experience to find veins crossing, bending, changing their course?

A. No, it was quite the common customary conditions to be found all through nature. Nature does not, as a rule, define any fissure or any vein as a perfect mathematical plane.

The COURT.—In other words, it does not run in straight lines?

A. It does not run in straight lines. Not only does it not run in straight lines, but the void or opening pinches. An old prospector up in that country once said: "She pinch and then she bulge and then she pinch again, but the identity remains."

Mr. GRAY.—You may inquire.

Cross-examination. [142]

(By Mr. COLBY.)

Q. Mr. Ralston, your first visit to the vicinity of this mine and to this mine was for the purpose of making a survey was it not, for patent?

(Testimony of James C. Ralston.)

A. That is my recollection.

Q. And it was not for the purpose of directing mining operations or as a mining engineer?

A. Not that claim.

Q. When did you afterwards visit that mine after your trip there in 1897?

A. Probably several times during that year.

Q. And then again you visited it in 1898?

A. Yes.

Q. That was for what purpose?

A. Well, among others to see that the stakes were described correctly on the amended survey.

Q. You made that amended survey in 1898?

A. The survey as I recollect it, was in 1898; a year later an amended survey.

Q. Did you visit the claim any other times during that year?

A. I think probably a number of times, I am sure that I did.

Q. You spent a good deal of time in that vicinity during those two years?

A. In the whole time; yes, sir.

Q. How about the year 1899? A. More or less.

[143]

Q. When did you first change your idea which you obtained when you made your patent survey that there was a vein running down through the middle of the vein, and determine otherwise in your mind?

A. Well, the vein running down through the middle of the claim, you, I trust, are not getting mixed up now as to my testimony in defining the theoretical lode line and the manner in which I sought

(Testimony of James C. Ralston.)

to seek justification for that—I trust you are not mixing that up with the vein as developed.

Q. I understood you to say that there was enough indication there running along the middle line to lead one to believe that there was a vein generally following that course of the lode line. A. Yes.

Q. Now, when did you come to conclusion that that was not the case?

A. Definitely and finally on a visit made about a year ago.

Q. And after that time you still believed that there was a vein running northwest and southeast through the claim? A. Yes, sir.

Q. Now, this No. 1 tunnel that you pointed out as being in a certain number of feet at the time you made your patent survey was later extended, was it not? A. Yes.

Q. Did you ever visit the tunnel and the workings in there later on? A. I did about a year ago.

Q. And not after you made your patent survey?
[144]

A. No, sir; not to my recollection at any time until about a year ago.

Q. You did not gain any information in those early years which would lead you to believe that there were cross-veins coming through the Lone Pine claim substantially or nearly at right angles to the general length of the claim? A. I may have.

Q. When did you get that information or get that idea?

A. I could not say for sure. Some time within

(Testimony of James C. Ralston.)

the period of 20 years, but to fix any date would be very difficult.

Q. You did not know anything about what may be termed No. 2 vein?

A. What do you mean by No. 2?

Q. You never heard of the No. 2?

A. Well, I heard of four veins on the property from gossip among the men.

Mr. GRAY.—I would just as soon you would leave the gossip out, Mr. Ralston.

A. From the standpoint of numbers, that was all the information that came to me.

Mr. COLBY.—Q. But not from actual observation?

A. Oh, yes, I saw at a later time these several veins.

Q. Could you fix that period of time?

A. No, I could not; not very well. I would not like to. [145]

Q. It was not recently?

A. That was some time ago.

Q. When did you stop visiting the Republic Camp, so that you were not up there frequently, as you were in the early days?

A. Probably in 1903 or four, possibly.

Q. And since that time, most of your work has been civil engineering rather than mining, hasn't it?

A. No, since about in 1897, perhaps half of my work, as I said before, has been civil, and half has been mining work.

Q. You do not know anything, then, about work

(Testimony of James C. Ralston.)

that was carried on in the drift from No. 1 tunnel on what I call—there seems to be some objection to calling it that—

Mr. GRAY.—None at all, Mr. Colby; call it what you please.

Mr. COLBY.—It passes through points 150 and 153. You have no knowledge of work done in that vicinity?

A. I have knowledge of such work being done. I examined it very carefully last year.

Q. The result of your last visits?

A. The last visits.

Prior to that time, you did not know anything about any mining work?

A. I am not sure about that; I might have.

Q. Did you know anything about the value of the ore taken out? A. I doubt it.

Q. And the amount of stoping done. [146]

A. I doubt it from memory. If I did, it was possibly from reading, from compilations of matters that I might have gone over years ago.

The COURT.—If counsel will put it personal knowledge.

Mr. COLBY.—Yes, I do not care anything about gossip or what you learned from others, but you are quite clear as to the acts which you performed on the ground in 1897 when you made your patent survey? A. Yes, sir.

Q. That was in 1897, but you were not very clear about your knowledge of mining and stoping on any lateral veins that might be cut by the No. 1 tunnel in those early days?

(Testimony of James C. Ralston.)

A. Well, whatever there was, I am indefinite about it now, because, as I say, many times I visited the property, but like many other properties visited it to see how it was going along without having a clear, definite recollection after ten or fifteen or twenty years.

Q. Did you ever make a report on this property to anyone? A. I did.

Q. To whom?

A. I cannot remember now to whom. I remember distinctly having made a report.

Q. Did you make a report to a Mr. Burleigh?

A. I would not say that it was Mr. Burleigh.

Q. Did you make a report at his request or for his information, or Mr. Leckie, Major Leckie?

A. It is possible. [147]

Q. About what time did you make such report?

A. If I did make such a report, that probably would have been—well, it would be hard to fix that definitely—possibly in 1899 or 1900, perhaps 1901 or 1902, but I would not say definitely.

Q. Did you ever make any maps of this Lone Pine claim about that time, showing the course of the veins to be found in the claim of your knowledge at that time?

A. It is possible that maps were prepared on account of my reports.

The COURT.—I think if reports were made, or maps were made that long ago, that the witness' attention should be called to them.

Mr. COLBY.—Yes, sir.

(Testimony of James C. Ralston.)

Q. Well, I will call your attention to a little flat here. I show you now what purports to be a plat of the Pearl and Surprise claims, Republic, Washington, U. S. A., with the date March, 1899, on it, and J. C. Ralston, M. E., which is a cut, a reproduction evidently made from an original plat. I want to know if you made the original plat from which that cut was taken

A. It looks very much like work; I probably did.

Q. Have you the original of that?

A. I doubt it very much.

Q. But you do not remember these facts connected with this particular plat as well as you do the facts connected with your patent survey?

A. No, I confess frankly I do not. I do remember having made a report, now that you speak of it, very clearly, [148] very well indeed.

Q. And this plat shows two lateral or cross-veins crossing the Lone Pine in rather heavy lines, and then a dotted lateral or cross-vein, does it not?

A. That shows two cross-veins across the Lone Pine for its entire width, and indicating, though both those cross-veins contain the Pearl Surprise vein, there was a period in the traditions of the camp and in the history of that region when the idea of the north south vein was abandoned and it was believed that there were cross-veins, and it was evidently during that period that those were developed. A later period has followed since, it is true, when by virtue of development other facts are shown, those cross-veins are known to exist.

(Testimony of James C. Ralston.)

Mr. COLBY.—I would like to introduce that as an exhibit.

The COURT.—It will be admitted.

Mr. GRAY.—It is given a continuous number and marked Defendant's Exhibit No. 14.

Mr. COLBY.—Q. I show you what purports to be a copy of J. C. Ralston's report on the Lone Pine-Surprise Consolidated group of mines of Republic and ask you if you recognize that as a copy of the report which you just referred to which you possibly made for Major Leckie or M. Burliegh.

A. Well, that is a pretty old document. Well, it might have been made by me, I would not say. As I say, I remember of having made a report, but this as the report, is evidently incorrect, because it is not signed by me, nor [149] has it got my writing or notations, and yet, I do not say but what it is from a copy.

That is all I asked you. I did not ask you if it was the report, but if it was a copy.

A. That may be; you could not prove it by me, however.

Q. Have you a copy of that report?

A. I doubt if I have.

Q. Well, would you be so good as to look among your effects and see if you could find a copy?

A. If the report is anywhere it is here, because I made an effort to find some of my old information of notes and surveys and reports. I fear that the whole thing was burned in the San Francisco fire. I moved down there, or at least had an office there

(Testimony of James C. Ralston.)

for several years prior, and in shipping down, my man here in shipping down some of my records, did ship down a lot of the old Republic and I am not sure but what it is in that. I have never been able to ascertain satisfactorily.

Mr. COLBY.—I will read portions of this and ask you—

The COURT.—If you will allow counsel to examine it during recess it will probably save time. Just hand it to him and let him examine it during the noon recess.

Mr. COLBY.—Yes, sir, but I may go ahead and ask questions from the report, may I, and ask him whether he recollects whether he had that opinion at that time?

The COURT.—Yes, sir. [150]

Mr. GRAY.—Better let him read the whole report. Let him do that.

Mr. COLBY.—We can put the whole thing in. I intended to put it in myself later on and identify it.

Mr. GRAY.—Let him identify it.

Mr. COLBY.—Then in the interests of expedition we might postpone that.

The COURT.—If Mr. Ralston is unable to identify it, unless counsel can agree upon it, I do not see what can be accomplished by it.

Mr. GRAY.—If you will let Mr. Ralston read it through.

Mr. COLBY.—All right, I will let you look at it, Mr. Ralston, and see if you can refresh your memory and determine whether that is a copy of the report you made.

(Testimony of James C. Ralston.)

A. It will take 15 minutes now to read this over; there are four pages here.

Mr. COLBY.—I would like to, in the interests of expedition, to hurry this thing up, but I do not see how we can avoid this.

The WITNESS.—I do not mean to be technical at all myself, or—

Mr. GRAY.—No, I am not going to be either.

The WITNESS.—Whether this is it or not, I am not sure. I remember distinctly of making a report.

Mr. COLBY.—Perhaps we can expedite matters in this way, by letting this matter go until after the noon recess and let Mr. Ralston examine that in the meantime and I can ask him something along other lines. [151]

The COURT.—Are you through with the examination of the witness other than that?

Mr. COLBY.—No, I have one or two other questions.

Q. Now, I understood you to say in answer to the question asked you by plaintiff's counsel that all of the veins in the Eureka district had a northwesterly direction.

A. Your misunderstanding is getting you into trouble. I said all the veins in the Eureka creek vicinity.

Q. I see. Well, is this Lone Pine claim in the vicinity of the Eureka Creek? A. Yes, sir.

Q. And all those veins that are found in that claim have a northwesterly direction?

(Testimony of James C. Ralston.)

A. You are speaking as of that time of the patent survey?

Q. Only as of that time. You did not intend to convey the information to his Honor that all of the veins in that claim ran northwesterly?

A. No, there is this vein in question here that runs northeasterly. I did not intend to creat a false impression.

Mr. COLBY.—I think that is all with the exception—

Redirect Examination.

(By Mr. GRAY.)

Q. I am going to ask you a question or two about this Exhibit No. 14. Can you say whether or not that was made as a result of a survey made by you up there and examination, [152] or whether it is the work of your office or you as a draftsman. Have you any recollection, I mean, of going up, making an investigation and making that map from any investigation or survey—well, I will withdraw the survey because it shows—

A. As far as the survey is concerned it is a reproduction of the patent survey shown here with a tracing of the Pearl vein, so-called Pearl Surprise vein, and these two alleged cross-veins with a Pearl tunnel—

The COURT.—The question is, how you came to make it.

Mr. GRAY.—Yes, sir; I am trying to find out whether you made it from a survey that you made up there or an examination you made, or how you

(Testimony of James C. Ralston.)

came to make it, if you have any recollection.

A. Well, I confess frankly, I am hazy as to whether this has been made from a definite survey by myself or my assistants for the purpose as shown on this plat.

The COURT.—What is the date of that report?

Mr. GRAY.—This map is March, 1899. Now, I want to find out a few things about this. I want a scale of that, if you will give me the scale. I want to see where these two alleged cross-vein show on this exhibit, where they would be. I was just wondering, Mr. Ralston, if you could tell us what these shields and two picks and Republic, Washington, are on the back. It looks as if we had posters and circulars for the district of Republic camp.

A. It would suggest that.

Q. Well, if you will give me a scale off of that.

A. Yes, sir, I can make it just in a moment now. As I [153] say, there was a period in the history there—

Q. Never mind, now; I want to get this on the map to find out where the two alleged cross-veins come. I will want Mr. Burch to find them.

Mr. COLBY.—I think it is up to your witness. He is responsible for this, and I am not.

Mr. GRAY.—We are only vouching for his correct observations and not incorrect ones, which were made long ago.

Mr. COLBY.—We usually do that in the case of most of our witnesses.

The WITNESS.—There is the scale.

(Testimony of James C. Ralston.)

Mr. GRAY.—Q. Now, the most southerly of those veins which are simply marked cross-veins from the southwest corner of the Pine—

A. Where it is shown as intersecting the west side-line of the Pine is a distance of 230 feet north of the southwest corner of the Pine.

Q. 230 feet you say? A. 230 feet.

The COURT.—Where does it intersect the east line?

A. It intersects the east line at a distance of 600 feet from the southeast corner. [154]

Q. I wish you would come and mark that 230 here. Mark it with red pencil "230."

(Witness marks same as requested.)

Q. Now take the other one.

A. 600. (Marks same.)

Q. That is the point 600 feet out?

A. That is the point 600 feet out.

Q. Now, get me the other vein that crosses the west side-line.

A. That is a distance of about 350. (Marking same.)

The COURT.—For all practical purposes they are about the same distance apart.

A. Yes. That would be 720.

Q. Now, there is still another one that Mr. Colby referred to, the lateral or cross-vein apparently crossing further up or north out of the Lone Pine claim crossing the west side-line? A. Yes.

Q. About where is that?

(Testimony of James C. Ralston.)

A. That is a distance of about 675 feet, say south of the northwest corner.

Q. All right, let us put that on there.

A. (Witness marks same.)

Q. Now, then, Mr. Ralston, have you carefully been over that ground within the last year?

A. Yes, sir.

Q. Is there any vein crossing it at the point marked 230, the west side-line of that Lone Pine claim?

A. None that I have been able to discover. [155]

Q. So that whatever you have mapped or thought in 1899, it is not there to-day and cannot be found?

A. No.

Q. Is that true at the point 350 feet, so far as you are able to observe? A. It is.

Q. Is it also true at the point 675 feet?

A. It is.

Q. That ground is open for observation and examination to-day, is it? I mean there is nothing to prevent seeing those points.

A. I think not. It is on the hillside there, it can be seen. The fact is that the developments within the past year have upset all theories as to this particular vein being a cross-vein. There was a time when I entertained, as I said before, the notion that it was clearly a cross-vein, but the developments in the last year have clearly shown that to be incorrect.

Recross-examination by Mr. COLBY.

Q. These veins which you now are pleased to term alleged cross-veins which appear on your map have

(Testimony of James C. Ralston.)

a course quite substantially parallel to existing veins within the claims, do they not? A. Oh, yes.

Q. And on that small scale map you do not evidently have the idea of exactly representing the exact position of these veins, do you?

A. Well, I cannot say as to that. It is a drawing. It is sought to represent them as nearly accurately as [156] possible.

Q. You had already examined that ground, had you not?

A. Oh, I say I have been over it many times, as I testified.

Q. So that you would not put cross-veins upon a map knowingly intending to misrepresent veins, would you? A. No.

Q. And so according to the best of your belief at that time that represented at least substantially your idea of the position of these veins, did it not?

A. It may. The text of the report accompanying this drawing here—the text may fully explain what I had. I don't know.

Q. I will explain now that I have no idea that this little map accompanies the report. In fact, I am quite sure it does not, because you stated that your report was made in the year 1900, and that corroborates my idea of it, my information.

A. It may have been made for it. I told you I wanted to be quite distinct as to my haziness as to these dates that you are trying to fix in closely.

Q. As far as I know, the report and that particular plat have nothing to do with each other.

(Testimony of James C. Ralston.)

Mr. GRAY.—Would you mind telling us where this plat comes from?

Mr. COLBY.—It came out of the archives of the Lone Pine-Surprise Company and it was originally attached to a report.

Mr. GRAY.—A report of Mr. Ralston's?

Mr. COLBY.—No, another report.

Mr. GRAY.—Somebody else's report? [157]

Mr. COLBY.—Yes. It was merely used—

The COURT.—A great many things have come out of that district besides mineral in the last thirty years.

Mr. COLBY.—We would be glad to let you see this plat if you will agree to let us put it in as evidence.

Mr. GRAY.—I was just wondering if some mining engineer had had Mr. Ralston as a civil engineer prepare a plat for him and attached this plat to his report.

Mr. COLBY.—No, this plat is of such a late date, that this plat was merely used to illustrate the purpose of this district plan here, and had nothing to do with the report and unquestionably was not prepared by the person for the purpose of the report to which I find it attached. He had a number of plats of his own.

Q. Now referring to this discovery here, Mr. Ralston, have you examined that recently?

A. Yes, sir.

Q. And refreshed your memory as to what is there in that vicinity? A. Yes.

Q. What do you find there?

(Testimony of James C. Ralston.)

A. Within the trench?

Q. Within the trench and in that immediate vicinity.

A. Well, I find the same there that I found before, viz., great congeries of small calcite and quartz stringers continuing from a fraction of an inch up to several inches in width. That is a characteristic of the cap of that hill.

Q. And did you find any defined vein running in a northeasterly and southwesterly direction? [158]

A. Small veins can be and I did find running in the direction that I indicated.

Q. Have you surveyed many claims for patent?

A. Oh, I don't know what you mean "many." Relatively no, I don't suppose so. I don't know how many.

Thereupon an adjournment was taken until 2 o'clock P. M. of this 24th day of August, 1920. [159]

August 24, 1920, 2 o'clock P. M.

J. C. RALSTON resumed the stand and testified as follows:

Question. Now, you have had a chance to examine this copy of the report. Are you able to state whether that is a copy of the report which you made.

A. I think it is, without a question. I have read it over and recasting in my mind a little on the matter, I think undoubtedly it is one of the many reports that I wrote of the Republic District, this one in particular of the Lone Pine-Surprise Claim.

Q. Can you fix the date at which you wrote that?

A. I can't fix the date very closely, no.

(Testimony of James C. Ralston.)

COURT.—Is there any date on it?

A. No, there is no date on it. I rather fancy there seems to be some omission here. The continuity approximately does not seem to be entirely complete.

Q. Can you recall any omission which would come into your mind as being in that report?

COURT.—If this report is correct as far as it goes I don't believe we will concern ourselves with omissions.

Mr. COLBY.—The important matter is he mentions no north and south vein as appearing on this claim in the report, they are all cross, or lateral veins, as he calls them. That is the important matter.

A. Now, the fact is that there was a period in the history of that camp when the general tradition was north and south vein with the exception of the two or three as denoted in this report, and they are here called No. 1, No. 2, No. 3 and No. 4. I myself for a long period of time believed after developments were made on this No. 2 as mentioned in this report, that it was a cross-vein, crossing over into the Pearl ground. [160]

Mr. GRAY.—Suppose you just indicate what you mean by No. 2.

A. By No. 2 I mean the vein in controversy in this instance here, the vein shown on Plaintiff's Exhibit No. 2 as being the topmost development of these several drifts.

The COURT.—Where is vein No. 1?

A. It is called Pine No. 2 level, which is shown here 100 ft., and runs over this east side line.

(Testimony of James C. Ralston.)

Mr. GRAY.—The Judge asked of you where No. 1 was, didn't he?

A. Vein No. 1 is shown at the portal of the No. 1 tunnel; No. 2 vein, this one, No. 3 is here and No. 4 the extreme northerly of that series of four veins.

Mr. COLBY.—Q. Now, to get that definitely fixed No. 1 appears at the mouth of tunnel No. 1, No. 1 tunnel crossing it at right angles.

A. About right angles to the direction of the tunnel.

Q. Now, No. 2 is the one in which the main workings appear, and where the main stopping has been done, that is No. 2 vein? A. No. 2 vein is marked.

Q. And the vein has been followed down to the 600 level? A. Yes.

Q. Vein No. 3 runs through what point, about?

A. I take it you refer to that showing at the point marked 152 on No. 1 tunnel.

Q. And that also runs practically at right angles across the direction of the tunnel?

A. Substantially right angles; it varies a little.
[161]

Q. And then your No. 4 vein?

The COURT.—The discovery.

A. No, sir; the discovery is over here.

Mr. COLBY.—Q. No. 4 vein?

A. No. 4 vein is the one shown in the vicinity of a point marked 153 in the same tunnel.

Q. Then this follows in the same general direction, so it is approximately parallel to the other three veins that you have named, and described?

(Testimony of James C. Ralston.)

A. Substantially running in a northeasterly and southwesterly direction. Now, as I was saying that I—first it was the period in which the tradition of the camp and the general belief prevailing with at least myself and many others was that these all were series of cross-veins cutting over possibly into the Pearl vein, and this one in controversy. That condition of general belief was that these veins as I say, joined over here.

Mr. COLBY.—I don't want to interrupt, but I don't believe we are particularly interested in general belief in the camp.

The COURT.—There is no question before the Court now.

A. I am trying to explain my own position only. But up to a year ago or thereabouts I had the notion that this vein was a cross-vein until September, about a year ago.

The COURT.—That has been gone into.

A. When I found this development here, I changed my theory on that.

Mr. COLBY.—I would like to introduce this and have it marked as an exhibit. [162]

(The report previously referred to by the witness admitted in evidence without objection and marked Defendant's Exhibit 15.) [163]

Redirect Examination.

(By Mr. GRAY.)

Q. I just want to indicate to the Court how the work was done.

The COURT.—I think the witness has already in-

(Testimony of James C. Ralston.)

dictated what was done, but you may proceed.

Mr. GRAY.—I doubt it, your Honor. Go to that tunnel No. 1 now. I just want to call attention to it so you can see it on the map.

The COURT.—Yes.

Mr. GRAY.—What you call the turn of the level at the intersection of adit 1—adit level is what is now known as Pine No. 1 tunnel? A. It is.

Q. The only tunnel as I understand it that was driven at that time was the No. 1 tunnel?

A. I think there is a piece of tunnel extends over here.

Q. That had not been extended very far?

A. No.

Q. How far had this vein been driven on easterly and westerly, that is what I want to get at, if you can tell either from this report or from your recollection.

A. The report there indicates for a distance of 300 feet all told. I think 100 feet westerly and the balance of the distance over—

Q. 100 feet westerly, you say?

A. That is my recollection.

Q. The balance was over in through across the east side line of the Lone Pine? A. Yes, sir. [164]

Q. And into the Fraction claim?

A. I think even into the Last Chance, all the way across just into the Last Chance.

Q. None of the other workings had been put in in the Pine at that time?

A. Nothing but a winze about 20 feet deep.

(Testimony of John Welty.)

Mr. GRAY.—That is all.

Mr. COLBY.—That is all.

Witness excused. [165]

Testimony of John Welty, for Plaintiff.

JOHN WELTY, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. What are your name, residence and occupation?

A. John Welty; Miner's Falls, Washington; occupation, farmer.

Q. Did you ever follow mining?

A. No, not practical mining. I have done prospecting and worked in the mines.

Q. Did you ever prospect in the Republic district?

A. Yes, sir.

Q. Did you locate any claims there?

A. Yes, sir.

Q. What claim? A. The Black Tail.

Q. When did you locate that claim?

A. In February, 1920, I think it was.

Q. Can you remember the date?

A. I did not remember it until I looked it up.

The COURT.—1920?

A. No, pardon me; it was 1896.

Mr. GRAY.—What day in February?

A. February 20, 1896.

Q. Were there any other claims located in that immediate vicinity at that time?

(Testimony of John Welty.)

A. None located in that neighborhood, that I was aware of. [166]

Q. So that your Black Tail was the first claim located in this immediate vicinity? A. Yes, sir.

Q. What claim was next located so far as you know? A. The Quilp.

Q. Whereabouts did that lie?

A. South of the Black Tail.

Q. Then what claims were located?

A. The Lone Pine was located next.

Q. Did you know the locators of the Lone Pine?

A. Yes, sir.

Q. Will you just tell the Court where you made your location on the Black Tail and what you had in the way of a vein and how it ran there?

A. The location notice was right here. That is the discovery, and this cropping cropped out the whole length of the claim from here to here.

Q. That is, as shown on the map? A. Yes, sir.

Q. From the discovery northerly and southerly?

A. Yes, sir; nearly the full length of the claim.

Q. How does that ground lie with reference to this gulch that we have heard about?

A. Well, after you pass this point—

Q. This point is point 875. After you pass that point what does it do?

A. It gradually runs down; I think the deepest part of the gulch is about in here.

Q. As shown here? A. Yes, sir. [167]

Q. What was on the other side of the gulch?

A. Well, there is a prominent ledge cropping out,

(Testimony of John Welty.)

all along here. There is a bluff right here that is standing there to-day, I seen it a few days ago.

Q. Whereabouts? A. It is right here.

Q. That is at the point marked 545?

A. Yes, sir.

Q. Could you see that from your discovery?

A. Yes, sir, plainly.

Q. Looking across the gulch.

A. Right across. The hill slopes down; it is very plainly to be seen; you could easy see the quartz cropping out there.

Q. How did that vein appear to run, Mr. Welty?

A. Well, it shows just as you have it on the map here; it swung around here and went up towards the east like.

Q. At that time was that shown on the surface?

A. Yes, sir; it showed out prominent on the surface.

Q. Tell me now were you present at or about the time that the location was made by Mr. Creasor and Mr. Ryan of the Lone Pine claim? A. Yes, sir.

Q. Will you tell his Honor just what occurred?
[168]

A. Well, I had located the Blacktail, February 20th, 1896, and was on my way out to record it. I had been on the reservation all winter, and fed stock up there and trapped during the winter, and I was over there all winter. As soon as I heard it was thrown open, I located that claim, and was on the way out to record it, and I met my brother, so I went back with him again, and then he located

(Testimony of John Welty.)

the Quilp, and then we met Mr. Ryan and Mr. Creasor, and we went in, and we camped together there some days, and they made their locations below, and I invited them up to look at our locations up there, and I told them there was still vacant ground.

Q. Where?

A. Well, this was all vacant here yet, the Blacktail, it was all vacant north.

Q. Where were you working at the time?

A. I wasn't doing much work. I just had a discovery, and digging around with what tools I had. I did not have very many tools to work with, and I told them there was more vacant ground across there; they could see it plainly, see the croppings sticking out, and they went over and made the location over there.

Q. You could see the croppings sticking out, could you? A. Oh, plainly.

Q. At this point 545?

A. See them plainly. I could see them from our discovery. [169]

Q. The top of the hill at the tree?

A. Yes, that was their discovery, here at the tree, where they had their notice posted.

Q. Where were the stakes on that claim laid with reference to the Blacktail—I mean the end-line?

A. The south end is supposed to have joined the Blacktail's north end. It looks all right to me, anyway.

Q. Was the claim located in approximately the

(Testimony of John Welty.)

direction they was patented and is shown upon the exhibit? A. Yes, sir.

Q. Did you see the workings there within a day or two of the making of that location?

A. Yes, sir; I seen them working right at this point here.

Q. That is the point we have already referred to as station 545?

A. Yes, sir; right off of the bluff. There is a bluff right there and it has showed up there as a large lead of quartz cropped out.

Q. Could you see what they were doing there?

A. Oh, they were like ourselves; they had very few tools, and just doing the best they could with what tools they had.

Q. Did they work there off and on at any other time?

A. Well, later on, we went out, you see, when the [170] cold weather set in for a week or so there, and there wasn't a great deal done.

Q. How soon after they went over there and made the location was it that you saw them working there at the point 545?

A. To the best of my recollection it was a day or two, or probably a few days afterwards. Twenty-four years ago—it is awful hard to remember all the little details.

Cross-examination.

(By Mr. COLBY.)

Q. Now, Mr. Welty, you say you put your first discovery on the Blacktail right there?

(Testimony of John Welty.)

A. Yes, sir.

Q. Did you cut down your first discovery tree that you marked, and change your Blacktail notice, the place where it was?

A. Not very far from where it was left when I placed the notice on it.

Q. You moved the claim, however, some?

A. Yes, just a short distance from where the location was made when I recorded it.

Q. You say that you *point* out to Mr. Creasor, Phil Creasor, this outcropping over here from your claim before he located the Lone Pine?

A. Well, we were on the hill together here, just about in the neighborhood of where the location stakes would be, and he could plainly see it across, and you can see it to-day yet. [171]

Q. What day was that?

A. Well, it must have been somewhere about a week later after I had made this location.

Q. That you pointed out to him this cropping over here?

A. Yes, sir; as near as I remember, it must have been. I had gone out and come back.

Q. In the meantime met those folks, you say? You would be certain as to the exact date?

A. No, I could not tell you the exact date. In fact, I don't remember the date that they made their filings, even, but it must have been just about a week later, because I met them going out and met them when I came back.

Q. Now, as a matter of fact, didn't Mr. Creasor make his location here before he talked with you

(Testimony of John Welty.)

about that outcrop over here on the hill?

A. No, I invited him up there. I don't think he did. I don't think he was up there until I had invited him up there.

Q. Where did you invite him?

A. I showed him over the Blacktail, showed him the quartz lead in there, and told him there was vacant ground on the north end of this yet, if he cared to stake it.

Q. Where was it that you had that talk with him? A. Well, at the camp before we went up.

Q. At the camp before you went up? [172]

A. I invited him up there to look over the situation.

Q. Were you with him when he made that Lone Pine location?

A. No, but I was on Blacktail at the time they were staking it.

Q. And you don't recall that date?

A. I acted as a witness for them, but I—

Q. You don't recall that date?

A. No, sir; I can't recall the date. It is too far gone, but I was a witness on the location.

Redirect Examination.

(By Mr. GRAY.)

Q. Mr. Welty, you were a witness on the location notice of the Lone Pine claim? A. Yes, sir.

Recross-examination.

(By Mr. COLBY.)

Q. I want to ask another question. You said that you could see at that time that this ledge here

(Testimony of John Welty.)

swung around on the surface?

Mr. GRAY.—No, sir; he didn't say anything of that kind.

The COURT.—He didn't make any such statement.

Mr. COLBY.—I understood him to say so.

The COURT.—He said he could see the croppings.

Mr. COLBY.—Q. You did not intend to convey the impression that at that time these trenches were there, did you? [173]

A. No, you could not see it here, but here it is quite prominent along in here. There is a bluff there that the quartz cropped out prominently.

Q. The ledge, as far as you could see at that time, had a straight course?

The COURT.—How much could you see of it?

A. Oh, there was probably 100 feet at least that cropped out prominently. You could see plainly from the location over there across the gulch.

Q. If you knew of that ledge there, why didn't you locate it?

A. I will tell you why I didn't locate it. It was something new to me. I had not seen any character of rock of that kind before, and I supposed that if it was anything of any value I had enough, and I wanted to get a lot more interested in there, and the more I got interested the more chance there was to get something out of it. That was my idea.

Q. You were willing to be generous?

(Testimony of E. S. Babb.)

A. I was. I had an opportunity to locate all of it. I was in there first, been there all winter.

Witness excused. [174]

Testimony of E. S. Babb, for Plaintiff.

E. S. BABB, called as a witness on behalf of the plaintiff and after being first duly sworn, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. Mr. Babb, will you state your name and residence, and occupation?

A. E. S. Babb; residence, Spokane; and my occupation up to a short time ago was a merchant; at the present time I am doing nothing.

Q. Were you ever engaged in mining in Republic?

A. A little.

Q. What properties were you interested in?

A. The Blacktail.

Q. Where did you get your interest in that?

A. I was one of the original locators.

Q. Are you acquainted with Mr. Welty, who has just been on the stand? A. Yes, sir.

Q. Was he one of the locators? A. Yes, sir.

Q. Do you know Mr. Ryan and Mr. Creasor?

A. Yes, sir.

Q. Are you acquainted with the claim known as the Lone Pine claim?

A. Yes, sir; I have been over the ground.

Q. Where did you first become acquainted with that claim? [175]

(Testimony of E. S. Babb.)

A. I should judge about two weeks after the Blacktail was located, maybe a little longer; as far as the date, I could not say exactly.

Q. Had the Lone Pine been located at the time you were first— A. Yes, sir.

Q. Who was up there on that claim?

A. On the Lone Pine?

Q. Yes.

A. Well, I met a good many there; I met Mr. Ryan, Mr. Creasor and lots of others backwards and forwards.

Q. You knew them to be locators of the Lone Pine?

A. Their names was on the location notice.

Q. Were there any—were you over any of the ground with either of them about that time?

A. I could not say as to that.

Q. Did you see them working there at about that time? A. Yes.

Q. Where were they working?

A. They were working across the gulch on the sidehill facing the south of the Lone Pine.

Q. Have you been back to identify that place?

A. Yes.

Q. Have—can you just show the Judge here from the map?

A. Now, where is our location notice of the Blacktail?

Q. Here? [176]

A. I should judge it was right about here some place; there was quite an outcropping there.

The COURT.—Some place on that red line?

(Testimony of E. S. Babb.)

A. On that red line; yes.

Q. There was an outcropping there? A. Yes.

Q. What of?

A. Quartz; what I considered at that time as kind of quartz.

The COURT.—Is the outcropping still there?

Q. Is the cropping still to be seen there?

A. Yes.

Q. You can see them from your discovery?

A. You can see them from our discovery right across there.

The COURT.—There is no use in taking up time on physical facts. If it is still up there the Court can go up there and see it himself.

Mr. GRAY.—I want to make it clear in the record that this particular outcrop was known at that time and being known it was primary.

Q. Were you over to that at any time while they were there? A. Yes, several different times.

Q. And that is the large outcropping that can be seen to-day from the discovery?

A. From the discovery on the Blacktail.

Q. And lies, may I ask you, near the southwest [177] end of what is marked "open stope" there?

A. Yes.

Q. That is the one that they were—

A. That is the one on the sidehill.

Q. That they were working on?

A. That they were working on.

Q. Did you go on up over the ground any?

A. Oh, yes; I have went all over the ground.

Q. At that time?

(Testimony of E. S. Babb.)

A. At that time, before I left there, from the time I went in until I came out. [178]

Q. Did you have any opinion as to the course of the vein there?

A. Well, nothing only that we thought—well, everybody,—at least I did, thought it was an extension of the Blacktail vein.

Q. What was, the place where they were working?

A. No, what we could see from here, the Blacktail would naturally be or considered an extension of the Blacktail ledge.

Q. That is the Lone Pine?

A. The Lone Pine, yes.

Cross-examination.

(By Mr. COLBY.)

Q. You could not see the Blacktail, any indications of the Blacktail were there in this ground at that time, could you?

A. No, there was a gulch that cuts off here.

Q. There was wash on the hillside? A. Yes.

Q. And these exposures that you saw the other day is those cuts, and so on, had not been made at that time?

A. Some of them had, they were working on some of them; yes, sir.

Q. But not down here; they were up on top of the hill, weren't they?

A. No, there has been some later work that has been done up along the sidehill, but those through here [179] was exposed.

(Testimony of E. S. Babb.)

Q. How was that on top of the hill—a big out-crop?

A. Along the side of the hill, not on top of the hill.

Witness excused. [180]

Testimony of W. L. Herrick, for Plaintiff.

W. L. HERRICK, called as a witness on behalf of plaintiff and after being first duly sworn, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. State your name, residence and occupation.

A. W. L. Herrick; Wallace, Idaho; general occupation, miner; present occupation,—at present I am occupying the position of Assessor of Shoshone County, Idaho.

Q. What experience have you had in mining, and where, and the character of it?

A. I have been mining for about 23 years—23 years in British Columbia. I have performed every operation underground. For the past years I have done no manual labor underground.

Q. Have you prospected any? A. I have.

Q. Developed prospects? A. I have.

Q. Are you engaged in mining on your own account any place now?

A. The only place I have at present, I am operating a lease of the old Standard mine at Mace, Idaho.

Q. Are you familiar with the Republic camps?

(Testimony of W. L. Herrick.)

A. Yes, sir; I worked there in 1899 and 1900.

Q. Where did you work at Republic?

A. At a little prospect beyond the Mountain Lion about a mile and a half from this ground in litigation. [181]

Q. Were you familiar with any of the mines, did you go into any of the mines, and look at them around Republic at that time?

A. Not very much except in the vicinity of where I was working.

Q. Have you examined the Lone Pine and the Blacktail and adjoining properties recently?

A. I have spent five or six days there in the last week.

Q. For what purpose?

A. Familiarizing myself with the properties to testify in this case.

Q. Now, Mr. Herrick, as a practical miner, have you gone there for the purpose of tracing the vein, which we call the Blacktail vein, and which my friend would like to call some other name, Pine No. 2, I believe—

Mr. COLBY.—Which your own men designated as Pine No. 2 until they were hired by you to make an investigation.

Q. (Continuing.) —but for our purpose we will call the Blacktail vein, have you gone there as a practical miner for the purpose of tracing that vein? A. I have.

Q. Have you done so? A. I have.

Q. Will you just tell the Judge where you have

(Testimony of W. L. Herrick.)

traced that vein, and what, as a practical mining man, you have found?

A. Well, I have been over, back and forth, and [182] through the workings, continuously for five or six days in order to have it thoroughly mapped in my own mind. I have been over the surface from—well, I should judge farther than this map shows in the south extension of the Blacktail vein, south of that open stope. I have traced it along the surface over to about the Insurgent or the Fraction—what is called the Fraction line. I have followed it through the various levels and workings wherever possible to get.

Q. Will you just point to that vein as you have followed it on the surface and tell us where it is continuous as you have followed it?

A. Well, starting from this southerly portion in the Blacktail and following it along here, there is faulting along there very plainly evident right in the bare croppings, to an open stope here. I was down through all along through here, these various cuts. While it is not only visible in the cut, but along through here it is visible on the ground in its natural state.

Q. Along here south of T-883?

A. Yes, along there. I would not attempt to put any exact mark, but it is a very distinct plain cropping through there. It does not require a great deal of work to show its course. After you get near the south end-line of the Lone Pine, the hill gets flat along there and the wash is very deep.

(Testimony of W. L. Herrick.)

I could not follow it through there. There is an end-line cut along the Lone Pine, going right along the end-line, [183] there is quite a deep cut, it is pretty hard to hold the ground, and there is quartz in there. There are some large pieces of quartz, and it looks as if the cut had caved in a little, been deeper and better cleaned at one time. I don't think there is any question that that is the apex vein over there. [184]

Q. Of the same vein?

A. Oh, yes, yes. And then there is a cut down through here which was sloughed in pretty badly there; pretty near have to spoil that cut to clean it. Then you get in what is called the end-line tunnel. There is a little filling in there but the vein is good and strong all through, that end-line tunnel. Then you get down about—well, about a little southerly of where a raise comes through as a winze. There this capping is strong and large. Then there is a gap, and you get into this heavy wash in the draw; then you pick it up again as you go out of the wash and follow it continuously around until you get to this open stope. Part of these open stopes are covered up. And then you follow it right around through—open stope here—if I remember rightly, I think the wash covers it right along where it hits the east side-line of the Pine.

Q. As a miner is there any question about that being one continuous, identical vein?

A. I don't see how a person can deny it. I will say, though, that if there had been no development

(Testimony of W. L. Herrick.)

either underground or on the surface, a point on the southwest line to this open stope, say over along through here—

Q. That is down near the Black Tail open stope?

A. Down near the Black Tail open stope—that I would doubt it. In fact, a person would be inclined to think they were different ones.

Q. But with the development as you have seen there, [185] what is your conclusion?

A. I don't think there is any question.

Q. As a miner, what have you to say as to whether or not veins do make turns and bends such as that?

A. We seldom get a vein that don't make a turn.

Q. Have you observed it any place else in the Republic camp?

A. I have noticed the condition in two places where I have worked, a good deal similar to that. We had one quartz vein going down near the Granite that looked a good deal like the Lone Pine-Surprise.

Q. You mean like the Pearl-Surprise?

A. Like the Pearl-Surprise, I should say. And then the one we worked on, it didn't have a curve like that, but it did have a curve along as much as that or little shorter than that.

Q. A little greater? A. Yes, sir.

Q. Have you followed that vein along over through the workings over into the Last Chance?

A. I have been in all the workings it is possible to get into. The most northeasterly working is the 500 level of the Last Chance.

(Testimony of W. L. Herrick.)

Q. Is it of uniform width throughout? A. No.

Q. What did you observe with reference to bulging and pinching of that vein?

A. Why, it is like all veins, Mr. Gray, it pinches and swells. [186]

Q. What was its condition as you followed it to the northeasternmost development as to its pinching down?

A. Why, the last, I should say about 25 feet of the 500 level in the Last Chance, there is just the vein there without much of any quartz filling. The stope pinches right about 25 feet I think from that point.

Q. Coming back now to the vein around the bend, and I particularly refer to from G to G' through that open stope and trench, what did you observe with reference to the bending of the bands of quartz or the bending of the vein?

A. Why, the vein has heavy bends. I took a course in that open stope—I managed to get up in a hole in the 200 level—kind of a dangerous looking stope—and the course going easterly was about north 50 degrees east, and then as you go near the southwesterly end of the stope it changes to about north 30° east. Then as you get right to the end of the open stope and start to go down the cut, it gets very nearly north,—I think about north 10°; then as you go lower from there it is just about due north.

Q. Those strikes you took in the stope itself?

A. I took them with a Brunton compass; yes.

(Testimony of W. L. Herrick.)

Q. Mr. Herrick, did you take any samples?

A. I did.

Q. When did you take them?

A. I think I took—might have taken a few on Saturday of last week and the balance on Sunday of this week.

Q. Will you indicate where they were taken?

A. Yes, sir. [187]

Mr. GRAY.—Mr. Colby, I had, for the convenience of all of us, Mr. Herrick, check where he took the samples, and number them on the map.

A. I took about 14 samples, I think. I started just south of the open stope on the property and went down various places up to here, then ending at the end-line tunnel.

Q. These samples are *number* from 2876 to 2883?

A. Yes, sir.

Q. What did you do with them?

A. I took them myself, sacked them, expressed them from Republic to Spokane.

Q. To whom?

A. To myself at the Davenport Hotel. And one of your engineers—I delivered them to him, and he took them over to Fassett.

Q. Who was that man?

A. I think Mr. Burg handled them.

Q. Did you get a report of the assays?

A. Yes, sir.

Q. Have you that report here? A. Yes, sir.

Mr. GRAY.—I will call the assayer, if you wish.

Mr. COLBY.—No, sir; it is not necessary.

(Testimony of W. L. Herrick.)

Q. May I have those?

A. Those include more than I have described.

Q. Let us get this clearly. Samples 2876 to 2883 are shown upon Exhibit 1. [188]

A. Yes, sir.

Q. Show us the points where they were taken.

A. Yes, sir.

Q. Where were the other samples taken?

A. They were all underground.

Q. Did you indicate on the map?

A. I think it is on the 10-foot detail.

Q. Those were samples 2884 to 2889?

A. Yes, sir. [189]

Q. And the exhibit which I have is the result of those assays. How did you take the samples?

A. I took them right across the vein probably in a channel about a foot wide.

Q. Now, I want to direct your attention particularly to the samples taken at the end-line of the Pine claim in this trench, samples 2883 and 2882.

A. Yes, sir.

Q. 2883 shows a value of \$13.14. A. Yes, sir.

Q. That is the one taken right here at the end-line?

A. It was taken right at the breast, on the footwall side where there was a round shot out there just the day before.

Q. And 2882?

A. Taken 14 feet back from that on the footwall side of that vein.

Q. Shows a value of \$11.23? A. Yes, sir.

(Testimony of W. L. Herrick.)

Q. Gold and silver?

Mr. GRAY.—I think your Honor can gather the others from a comparison of the map.

The COURT.—Yes.

Mr. GRAY.—Oh, there was one other. Just point out where sample 2889 was taken.

A. 2889 was taken right at the breast of what is called the winze level. It is where most of those interested in the case refer to breaking into the sand and gouge, where there has been surface erosion, and just the last day we were able to get spiled in there and catch it up so we could see the vein in place. [190]

Q. That is solid rock? A. Yes, sir.

Q. You got a value of \$4.78 there?

A. Yes, sir.

Q. Was that vein in place there when you saw it last?

A. Oh, my, yes. It is very solid—I cannot tell how large the vein is, but you can see it is at least more than a foot wide anyway.

Q. Did you bring any samples with you that you took at that place?

A. Yes, sir; I brought three chunks more so that the rest could see what was there.

Q. Will you produce those? You have those here? A. Yes, sir.

Q. In this sack. I am going to ask that they be marked as Exhibit No. 17. Will you just exhibit these now to his Honor and show where they were taken from and how? A. This one shows—

(Testimony of W. L. Herrick.)

Q. If we are going to separately describe them—

The COURT.—They were all taken from the same place, were they?

A. All taken from the same place.

Mr. GRAY.—All right, go ahead and describe them.

Q. Except this piece that shows the sand and mud from the waters coming down. In fact, it is washed off the hanging over the quartz; that is why it shows up so plainly.

Q. That is this side here? A. Yes, sir.

Q. Right on top of that is the sand. [191]

A. That is the hanging-wall of the quartz.

Q. And that is the quartz of that vein.

A. That is the quartz of that vein. It is the same as the sample that I took, 2889. I suppose it will run about the same, although there was shipped more of it for the sample itself.

Q. That vein is in place there.

A. There is no question about that.

Q. On this detail map that would extend just a little bit down into the bottom there as shown?

A. Yes, sir; it is just beyond—you see there were two sets of timber put in there and spiled over the timber in order to catch this soft gouge. The vein comes right down like that square across the drift in a northerly and southerly course.

Q. Dipping southeasterly?

A. Dipping southeasterly.

Mr. GRAY.—You may examine. I want to offer all of these several exhibits.

(Testimony of W. L. Herrick.)

Mr. COLBY.—Are you through with the witness?

Mr. GRAY.—Yes, sir.

Cross-examination.

(By Mr. COLBY.)

Q. Mr. Herrick, I understood you to say that there was a good vein at the end of this working in here. In the first place let us take this while we are here. What is showing in this tunnel that runs in past the gulch winze.

A. On beyond there? [192]

Q. Yes, sir.

A. There is a little split there and they got off the vein, or apparently did and it seems to come through this wall here, because a shot—that little dotted line shows a shot was put in there and showed up the quartz there again. Now, there is evidently some faulting, because it is not a well-defined vein through there at all. In fact, I don't think they are on the vein.

The COURT.—But where is that indicated on the surface map?

Mr. COLBY.—It does not show on the surface map. It is right in here. Here it is on the composite.

A. Well, it would come about under the end of the end-line tunnel.

Q. Now, taking the end-line tunnel, what do you find in that as you approach the end-line?

A. The vein in my judgment is mostly in the foot-wall there. I picked in probably a foot into the footwall further than the shots there, and that is

(Testimony of W. L. Herrick.)

where I got this ore that ran pretty well. Why I did that was that it had the appearance of vein matter, the pyrites of iron and rather typical vein structure in there and not like country structure with something shot through it. There is no question in my mind but what the vein is in the footwall of that inland tunnel.

Q. Not in the tunnel itself?

A. It is in the tunnel itself in the way of faults, but what I was looking for was a continuous vein in place, a well-defined vein.

Q. There is a fault shown in the tunnel there. [193]

A. Yes, sir; there are several of them, I think, little faults. There is one right near the mouth of that tunnel.

Q. Do you recall the last showing of quartz toward the end of that tunnel?

A. Yes, sir; I think that is where they got off there. Right out near the mouth of that tunnel there is a cross-fault in there, and I think that is where that vein is thrown into the fault. I think that is why they kept going there and got off the best part of it.

Q. Now, in the course of your inspection of the ground, and you were there only five or six days, I understand, altogether? A. Yes, sir.

Q. Was your attention called to a little winze right off the Pine 200 level at the fault just to the northwest of Station 320? A. Yes, sir.

Q. And what did you think of the enclosure that you saw in the face of that winze?

(Testimony of W. L. Herrick.)

A. Pretty good quartz.

Q. What direction was that going in.

A. A general northerly course.

Q. Wasn't it northwesterly?

A. Well, it might be. I mean within 20 degrees when I say northerly.

Q. The direction is substantially indicated by this red line crossing through the point 320.

A. Approximately yes.

Q. What was the size of that showing? [194]

A. I made no notes. According to my recollection it must have been a foot of quartz in it.

Q. And vein material, was that wider?

A. Yes, sir.

Q. That lines up substantially, doesn't it, with other exposures that you have here running in a northwest direction?

A. Yes, sir; but there are thousands—no, I won't say thousands, but hundreds of them that line up, that is, you go in an east and west cross cut, you find enumerable veins running northwest and southeast.

Q. Running in which direction?

A. Northerly and southerly.

Q. Let us take Pearl No. 2 tunnel, where do you find northwest and southeast veins innumerable?

A. I would not want to have you try to pin me down because I have no notes to substantiate it. You can see red lines shooting off here.

Q. Point out those that are going in a northwest direction. A. Well, they swing in all ways here.

(Testimony of W. L. Herrick.)

Q. Aren't they almost invariably northeast and parallel to the levels here shown on this Exhibit No. 2?

A. Possibly the greater part of them are. I think that is probably true. As you go in this Pine, that is the way you find most of these little stringers, are the east and west stringers. I don't think that has any influence on the north and south vein. [195]

Q. No, but you say that there are innumerable northwest and southeast veins through there, a thousand of them. I want you to point out some of them.

A. Perhaps you want me to be too exact. If I went in this tunnel and found them striking this way and that way, all around, I would say there were innumerable fissuring showing quartz going through there, which I do not consider of any value.

Q. Don't you think in view of the contentions and various comparisons in this case, that if they found any of those northwest and southeast ones that they would put them on the map there?

A. I just want to explain one thing here, Mr. Colby. This tunnel here was the one I only had in mind more going north and south, in fact, the Pearl tunnel, I just made one quick trip in it, but in this Blacktail tunnel you will find any number of north and south fissures.

Q. Take this Pine 200 level; do you find innumerable northwest and southeast veins in that?

A. I did not pay a great deal of attention to that upon No. 2. I always paid more attention to going

(Testimony of W. L. Herrick.)

in and following the vein. I don't think I paid much attention to it at all.

Q. Well, if there were thousands of them in the ground there.

A. I would like to say before you go much further that I did not do this as a geologist at all, just as a practical miner getting the course and strike of the vein.

Q. I mean, when you made the statement that there [196] were thousands of veins—

A. This will show you down here that there are any number of them, and undoubtedly a great many more, that are not worth while marking, minute fissures.

Q. Let us pick out those. A. There is one.

Q. Is that northeast and southwest?

A. It crosses that from one side to the other, Mr. Colby. Here is one going away off almost east and west. Here is one going that way. Here is another one almost straight off, and I don't think that is worth while paying any attention to, those small quartz stringers.

Q. Get back to the original claim; my original question was, didn't it surprise you to see that vein going off to the northwest, a substantial vein there, with a foot of quartz with more and greater thickness of vein matter and you said, "No, because there were thousands of those," and I want you to point out another one.

A. You asked me why I was not surprised?

Q. Yes, sir.

A. Because right about here is where a good part

(Testimony of W. L. Herrick.)

of the bending starts in there, and I considered that would be just like bending wood or something like that, you will get the fractures splitting off from the bend. I didn't consider it of any value or I thought it would be found off some place else. It was never followed and evidently did not amount to much.

Q. You say you did not take any notes of this?

A. No. [197]

Q. Was your attention attracted to these pits that have been marked in pencil on Exhibit No. 4?

A. Yes, sir, I saw all of them.

Q. And what did you find in there?

A. I found quartz very strong here and getting weaker as it went northeast until it was rather weak down in that sand-pit there.

Q. Was all the quartz exposed in that sand-pit?

A. That is hard to say.

Q. Wasn't it caving ground there, coming in, and didn't the men have great difficulty in holding the ground? A. It is all soft sand there.

Q. For that reason you would not be sure of the width of the quartz in that portion?

A. It gave one that appearance. It was petering out as it went to the northeast.

Q. That is a good substantial vein there as shown in these first three cuts to the south?

A. Yes, sir.

Q. What is its general strike as compared with what you call the Blacktail vein on these various levels?

(Testimony of W. L. Herrick.)

A. It runs a little more northerly than the main workings.

Q. It is substantially parallel, isn't it?

A. It looked to me as though it might be about 20 degrees off.

Q. Project your pointer there through those cuts so it will reach the levels. There is not a great variation there. [198]

A. As you go down, of course, there is more variation. Up on the top there would be probably 20 degrees variation.

Q. Did you notice the vein that has been referred to here as the No. 4 vein?

A. That stope in the Pearl tunnel?

Q. Yes, sir. A. I was in there.

Q. Did you see any mining in there, any evidences of mining?

A. Yes, sir; a little stope in there, an underhand stope.

Q. Did that impress you as being a vein of importance.

A. Certainly it was a vein; commercial ore in it.

Q. You did not see any turning of that vein?

A. There has not been enough work done in it to determine it.

Q. What would be your candid view of that vein?

A. What do I think it might do?

Q. Yes, sir.

A. I think it will pinch out.

Q. As it comes in a westerly direction?

A. I think this vein probably might have changed

(Testimony of W. L. Herrick.)

some in there, if the fracturing had not been continuous around here.

Q. And the cause of that fracturing you think that it continued on in a right angle direction or nearly a right angle direction?

A. That I think this vein did?

Q. Yes, sir. [199] A. I know it did.

Q. Did you see any other vein in the ground here in controversy? A. Yes, sir.

Q. What?

A. There is a vein right at the mouth of the Pine No. 1 tunnel. Then there is the Blacktail Lone Pine vein, the main ore-bearing vein. Then here are these various little ones, running off here on which they drifted but found nothing to amount to anything.

Q. Crossing the tunnel substantially at right angles.

A. Yes, sir. This, of course, is in the other tunnel. I guess this is the one that is in the No.1 tunnel.

Q. Yes, sir, that is on the same level. I think that is all.

Mr. GRAY.—That is all.

Witness excused. [200]

Testimony of Roy Wethered, for Plaintiff.

ROY WETHERED, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. GRAY.)

Q. Will you state your name, residence and occupation?

A. Roy Wethered; mining engineer; residence at Wallace, Idaho.

Q. Where were you educated Mr. Wethered, and what experience have you had?

A. I graduated as a mining engineer from the University of Idaho, and since then, which was in 1905, I have practiced my profession in Idaho, Washington, Montana and Mexico and British Columbia.

Q. Are you familiar with the veins of the Republic district? A. I am.

Q. In the course of your practice have you had much development work, development of prospects and work in producing mines? A. I have.

Q. How long have you been acquainted with the Lone Pine, Black Tail, Last Chance and Fraction claims, that territory in question?

A. About four years.

Q. What position do you occupy at the present time?

A. I have charge of the engineering department of the Tamarack & Custer Consolidated Mining Company, doing engineering work for the Tamarack

(Testimony of Roy Wethered.)

& Custer and Hercules, Northport [201] Smelting & Refining Company and other small properties.

Q. Now, let us go back to the time this litigation started and I want you to indicate to his Honor, what work was done at that time, or to get at it a little better, what work has been done since the litigation started and by whom? First, let us get the work which has been done by the plaintiff company since the litigation started. [202]

A. After a trench was dug on the western extremity of the Lone Pine vein to see where this vein extended, this trench disclosed the vein—the vein was disclosed in a westerly direction and then turning southerly where it became the Black Tail vein. Thus the Lone Pine and Black Tail veins were one and the same vein.

Q. That is the work Mr. Day described which was done before the suit started?

A. That was work done before the suit started.

Mr. COLBY.—That was done for litigation purposes?

Mr. GRAY.—No, it was not. Mr. Day testified it was not. You may ask Mr. Weatherhead here.

The COURT.—The question is what work was done since the litigation.

Mr. GRAY.—Since the litigation started what work was done by the plaintiff?

A. On the surface trench at the south end, called the end-line tunnel, that has been done since the litigation started.

Q. Now, then, any other surface work? A. No.

(Testimony of Roy Wethered.)

Q. Now, go to the ten-foot detail map and I think you can point out there what work also has been done.

A. In the neighborhood of Station 330 the drift has been extended on to the south to 331, through 334 on over to 340, into the south, also opened out to the surface to the west of 340. A winze was dug in the neighborhood of 340 just to the northwest and some drifting was done below the winze level.

Q. From the bottom? A. Yes. [203]

Q. What is the orange marking shown on that working intended to represent?

A. That represents the sand and gravel in the gulch.

Q. Were you present at any time when this most westerly of the workings on the winze level was open? A. Yes, sir.

Q. What was in there?

A. I was there at the time when this part caved through and just before it caved through. I was in there and saw quartz and vein material.

Q. Where was that?

A. At a point here about—oh 15 feet from 349.

Q. On which side? A. On the west side.

Q. Now, why did you run the winze level around in the manner in which you did?

A. Owing to running into this soft material and an open fissure and it caved on us and then we ran around here in order to get around the gulch.

Q. To the point where Mr. Herrick took sample 289? A. Yes.

(Testimony of Roy Wethered.)

Q. You went in then about midway between 349 and the northerly end?

A. Yes, and struck sand and gravel at that point.

Q. Now, then, any other litigation work performed, as far as you know, by the plaintiff company?

A. I don't recall anything particular except there was a little on the 300 level.

Q. At what station?

A. At Station 343. There is a drift a short distance [204] there and a raise and a little work was done from—well, it extends from 332 to the face.

Q. Now, coming back to the surface. What surface work has been done since this case started, on behalf of the defendant?

A. They have done considerable trenching in the vicinity of the center of the claim easterly and westerly from the discovery cut by patent notes. [205]

A. I think they started early in February and finished up in the latter part of April.

Q. Just point out to his Honor how they worked there, how they undertook the development of those stringers that have been testified to in that vicinity.

A. They dug a trench that disclosed a stringer going westerly from the discovery cut for 50 or 60 feet, and then turned southerly and then again westerly, where several stringers branched and cut off on a north and south stringer. And then another trench, at T-811 was dug, and disclosed another stringer, which came in from the northerly side of the trench and passed along the westerly and entered

(Testimony of Roy Wethered.)

another trench, T-810, and was lost, and another stringer was picked up and followed southerly and was lost in the wash. And then trench T-807, showed a quartz stringer running southerly, and then several other trenches there. T-808 showed a small—

Q. Had they in this first work, following down here and struggling around from trench to trench, followed any continuous stringer? A. No, sir.

Q. Now, their next effort was where?

A. They did some trenching still further north and westerly and disclosed a small stringer in T-808 and the same one in T-805, and in their cuts T-804, 802, and 801 did not disclose any.

Q. Then what else? [206]

A. Then on the east side of the claim they put a trench over there near Station 520 that disclosed a few small stringers. They also dug trench T-828 and disclosed a small stringer, and another one T-827, which disclosed a stringer that has a strike running further to the north, that is, that would carry it further to the north.

Q. Was this also a trench?

A. Yes, there is a trench in there at T-824, which disclosed a couple of stringers.

Q. Then what did they do?

A, I think they put in a trench 823, that disclosed some small stringers.

Q. Now, coming westerly again, when did they run these other pieces of work and trenches following other pieces of stringers?

A. That was done very recently, this month.

(Testimony of Roy Wethered.)

Q. This month? A. Yes, sir.

Q. Which one did they run first?

A. I don't know. I was not up there at the time, but they ran these two here.

Q. They are run on different stringers, are they?

A. Yes, sir.

Q. The northerly one on a different one than the southerly one? A. Yes.

Q. What becomes of that stringer that they run [207] out in the northern trench there?

A. They lost it and then ran down another trench, and it spread out in numerous stringers. And then later they ran another trench from this end,—

The COURT.—I think this would probably come in more particularly in rebuttal, wouldn't it?

Mr. GRAY.—I am simply going into it. I am not going to seriously combat, as Mr. Searls did not, that they have followed from one stringer to another over there, but I am going in to show just the character of these many little fractures, and I am really through with it now, but would rather finish with it.

Q. The last work they did was what?

A. From T-800 up to and joining one of these numerous stringers at "E."

Q. Where else have they done any work under ground?

A. They did some work on the 200 level near Station 331.

Q. That is the working which runs southerly there? A. Yes, sir.

Q. May I ask you now, Mr. Wethered, if you have

(Testimony of Roy Wethered.)

examined the vein in that working from 331½ south? A. I have.

Q. What is the strike of the vein?

A. It goes southerly and then turns and goes [208] southeasterly to the face of the drift.

Q. In your judgment, is that the same vein which is not numbered, what will we call that—just north-west of the gulch winze?

A. Near the gulch winze north, it is the same vein in my belief.

Q. Have you traced this vein on the surface from the Blacktail discovery up into the Lone Pine and out through the east side-line of the Lone Pine claim?

A. I have. The vein can be followed continuously with the exception of two or three places.

Q. In your judgment, what is the fact as to that being an identical and continuous vein from the Blacktail discovery up through the south end-line of the Lone Pine claim and out of its east side-line as depicted upon the Exhibit No. 1?

A. I believe it to be the same vein.

Q. I wanted to go back to one other piece of work that was done in the course of litigation in tunnel No. 1. Was there any work done there in Pine tunnel No. 1?

A. Yes. Pine tunnel No. 1 they did some work near Station No. 152.

Q. What work was it? Drifts along those little stringers? A. They ran some drifts; yes.

Q. I will ask you also who did the work from 326 westerly, if you know? [209]

(Testimony of Roy Wethered.)

A. That was done by the Last Chance.

Q. Now, without going into detail, the question which I have gone over with the other witness as to the continuity of this vein, do you, as a mining engineer, observe that vein and the banding of the quartz in the vein bending as is shown in the exhibits?

A. I do.

Q. Is that unusual, Mr. Wethered, in your experience, for a vein to act in that manner?

A. No, sir; it is not unusual.

Q. In the end-line tunnel there is a truss. Do you find this vein, or part of it, exposed there, crossing the south line of the Lone Pine claim?

A. I do. It can be seen in that tunnel in that direction.

Q. And is it continuous, in your judgment, from there on up, as shown? A. It is.

Q. Will you point to Station 331?

A. Just at that point.

Mr. GRAY.—That is the same one that is shown on this smaller map here.

The COURT.—Yes.

Q. How did you come to leave the quartz there that is shown in the southerly working and follow off to the east?

A. In drifting here we ran into this open fissure, filled with sand and gravel, and the quartz had been [210] removed slightly. At the foot it was covered over with the sand and gravel, and we naturally thought that it had been washed away, and we then drifted through the sand and gravel and picked it up on the other side.

(Testimony of Roy Wethered.)

Q. Later the work at the two points called cave opening and sand winze disclosed the vein on a little below that level, did it? A. Yes, sir.

Q. Is that the same vein as shown in the working from 331½ south, in that southerly drift?

A. Yes, sir.

Q. Were you at the property when this crosscut on the 400 southwesterly was driven?

A. I visited the property about that time.

Q. Did you observe that as it was freshly made?

A. I did.

Q. Did that disclose any vein of any size or character after you left the Blacktail vein at a point about 40 feet south of one and 50 feet southerly of Station 179?

A. It disclosed nothing but small stringers.

Q. It did not follow any vein? A. It did not.

Q. What is the fact as to their being a large number of little veinlets and stringers of quartz to be found close upon the surface and underground in this territory? [211]

A. They are quite numerous.

Q. Have you traced this vein, Mr. Colby, I believe that you have admitted that it is continuous downward into the Last Chance?

Mr. COLBY.—Yes, more on its strike than on its dip. [212]

Cross-examination.

(By Mr. COLBY.)

Q. Mr. Wethered, I believe you stated that you were in the employ of the plaintiff. A. I did.

(Testimony of Roy Wethered.)

Q. And have been for some time? A. Yes.

Q. Is this a common occurrence, that a vein should turn almost at right angles, as is the case here, in your experience? A. It does often so.

Q. Where have you seen other examples?

A. In the Coeur d'Alenes.

Q. What mines for instance?

A. Tamarack and Custer.

Q. In the Tamarack and Custer? A. Yes, sir.

Q. And they have right angle turns in veins and veins extend on each side for a considerable distance?

A. A considerable distance, yes.

Q. How great a distance?

A. I don't recall the exact distance; but as far as this distance that has been opened up here.

Q. Equivalent to this? A. Yes.

Q. Now, at this point that you testified to here, I believe in the vicinity of 331, you said you had quartz following along there to 331½, I believe this new point is marked. A. Yes. [213]

Q. Why is it that you turn with your working decidedly to the left and follow on a southeast course, if you had quartz in the working that you were following?

A. As I explained, we ran into these boulders and gravel and the quartz right at the bottom had been moved, I suppose, by the water and there was sand and gravel lying over it and it looked like the end of the vein at that point—it had been removed—and then we continued the drift as indicated.

Q. Isn't it a fact that there is continuous quartz along there as shown by this Exhibit 4 beyond 331?

(Testimony of Roy Wethered.)

A. Yes, sir.

Q. Well, now, why didn't you follow that quartz instead of turning to the left?

A. Because at the bottom of the drift is where the quartz is out and the sand and gravel lying over that didn't allow us to see it.

Q. Didn't interest you to follow it?

Mr. GRAY.—No, that isn't what he said.

Mr. COLBY.—In a right hand direction.

A. We could have followed the quartz if we had seen it.

Q. The quartz appears here in the little workings we ran, out beyond the little workings 331½ to the south, doesn't it?

A. It runs to the south and southeast.

Q. And you overlooked that quartz then and went on to the left. A. We missed it; yes, sir.

Q. Now, out here at the end of this tunnel which runs in past the gulch winze, what sort of showing did you have? [214]

A. We have quartz continuously exposed to and past Station 342.

Q. And there you are off the vein beyond that you think or has the vein ceased?

A. The vein—there are some gouge walls there. It may be that the vein is on either side or the other; possibly on this side.

Q. May have been thrown by this fault—the gouge walls indicate faulting, do they not? A. Yes, sir.

Q. And of course unless you had something to go by you couldn't tell?

(No answer.)

(Testimony of Roy Wethered.)

Q. Didn't it strike you as a little peculiar with such a massive vein as you have coming to the southwest through this working there that there should be such a weak vein beyond that you had such difficulty in following, finding it; didn't that occur to you as rather strange?

A. Well, it was a little smaller, but I didn't know but what it was as another part of that vein. It is smaller in other places.

Q. You say these cuts over here that are down in the left hand side, put in in pencil, with the red pencil markings crossing them—you have seen those cuts have you? A. Yes, sir; I have seen those.

Q. What is exposed in those cuts?

A. There is quartz exposed in them.

Q. There is a considerable vein there, isn't there?

A. In some of the cuts the quartz is possibly 3 feet wide; but in this cut, why, it is apparently quite narrow. [215]

Q. That is the one that is driven fully underneath the surface on an incline? That is the one to the northeast of the 4?

A. Yes, the most northerly cut.

Q. Now, the condition of the ground is a caving condition, isn't it, difficult one to hold?

A. It is drifted there; yes.

Q. And the workmen had great difficulty in keeping the wash from coming in?

A. Well, they put in some timbers there, pretty small timbers; I don't think they had much difficulty.

(Testimony of Roy Wethered.)

Q. And in your estimation was all the quartz shown there that exists in that vicinity connected with that particular fissure?

A. That stringer looked like it was all the quartz.

Q. You think that was all? A. Yes.

Q. Nothing covered up by the wash or beyond the wash? A. I could not see any.

Q. If it was there you did not see it?

A. I did not see it.

Q. Now, if that is such a clear turn of the vein here as you testified to running down the surface cuts, why is it that you could not turn that in on your other levels, say the 400 or the 600?

A. Probably we can.

Q. And you made no attempt to turn around at those places and follow that curvature to the south?

A. That is quite a low grade ore there, and it would not justify the work in that vicinity. [216]

Q. Where would you have to go in all probability to reach where the vein should be?

A. Well, to get that direction they might have to extend around some few hundred feet.

Q. Some few hundred feet, you think? A. Yes.

Q. That is the 500?

A. It might extend 100 feet.

Q. Leaving out the 500?

A. It might gradually turn in that distance, but it would have to go a little before the turn would be completed.

Q. How far on the 400 would you have to go before you would reach a turn?

(Testimony of Roy Wethered.)

A. Well, you might not have to go very far.

Q. If there was a turn there, it would have taken very little work to have shown it, wouldn't it?

A. Well, I don't know, it might take quite a little work, I could not say as to that.

Q. On the third level here, there at 343 you have a working that turns sharply to the east, nearly due east and west from 343. Do you consider that at the old turn? A. There is a branch there.

Q. Is that out of the Black Tail vein going south?

A. I am not so sure of that. It is possible that the Black Tail lays a little bit farther in the footwall here.

Q. You did not get it in that working, did you, turning to the south so you could see it clearly?

A. There are some small stringers there, but they are not very large.

Q. That is all you get, some small stringers, where you [217] have a great big vein back here that is several feet wide?

A. Well, the vein there is not so wide as back in this vicinity.

Q. Well, it is a strong, persistent vein, isn't it?

A. It is persistent, yes.

Q. Now, did you ever know of or see an indication of a little winze that is on the 200 level right to the northwest of point 320?

A. There is a hole there with water in it. I was never down in it.

Q. And you haven't any indication there of a hole on this map. Were you responsible for this map?

(Testimony of Roy Wethered.)

A. No, sir; I did not make the survey.

Q. You don't know whether or not, then, any vein went down in that hole?

A. No, I was never down in it.

Q. Did you see any indication of a vein in the stub immediately beyond, in the face of that stub that goes northwest?

A. There is a little quartz in there.

Q. What would you call a little?

A. Well, it is possibly a foot wide.

Q. There is as much quartz as you have in any of your workings going south, isn't there?

A. Oh, no.

Q. There is in some places.

A. In some places it is nearly as wide.

Q. I believe that you said that you could find veins running in any direction with quartz occurring in this country? [218]

A. Well, there are numerous quartz stringers up there.

Q. Do you find many northwest and southeast stringers?

A. There are some exposed, but I suppose probably by uncovering you would find many more.

Q. If you ran a crosscut to the east you would cut through northeast southwest stringers, wouldn't you, if they existed? A. You might crosscut some.

Q. I call your attention to a crosscut here from 190 to 191 and ask you if you find quartz stringers running through that?

A. Well, there are not many exposed there.

(Testimony of Roy Wethered.)

Q. They would be on this map, wouldn't they, if they showed there plainly observable?

A. Probably.

The COURT.—This witness cannot tell what would be on the map.

Q. Didn't you have anything to do with the directions of putting on these various exposures of faults, veins, and so on?

A. I had something to do with part of it, yes.

The COURT.—I suppose counsel will concede that it shows all of the ore that was discovered, practically.

Mr. GRAY.—I don't want to concede that it shows all of the stringers that are in there, because, as Mr. Searles says, there are hundreds of them, and it does not show all of them. But anything that is particular.

Mr. COLBY.—Except I think these crosscuts that run east and west and northeasterly, it would not run the hundreds and thousands that you have been testifying to. [219]

Mr. GRAY.—His Honor can go up there and see them. You can get them there from pieces of rock as big as your hand.

Mr. COLBY.—Are they comparable to the ones you put on the map here?

Mr. GRAY.—Oh, no; they only put on the map the larger ones.

Mr. COLBY.—You find that in all mineralized country, stringers running in all directions, from infinitesimal up to the size that has been pointed out

(Testimony of Roy Wethered.)

there, of course. But when we come here we have those things which are plainly observable put on the maps. Do you know when this suit was filed, when this action was commenced?

A. I don't know exactly. It was some time a year ago.

Q. About a year ago? And you had been doing some work in preparation for this, hadn't you, at that time?

A. Well, yes we had done some work up there for the reason for starting the action.

Q. And you had, of course, the year that followed, in which to make these developments. I think you said that it was common to find this right and lg tuen in veins, and you gave as an instance this Tamarack and Custer mine as one case where you had found such an example. Can you give me another example in some other mines?

A. There is an example right there.

Q. I mean some other mine.

A. There are instances in the San Poil in the same district.

Q. Where a vein turns at right angles and runs for a [220] considerable distance?

A. For quite a distance; yes.

Q. How far? A. I don't know.

Q. Do you know that of your own knowledge?

A. Yes, sir.

Q. Have you seen it? A. I have.

Q. Can you give another instance?

(Testimony of J. E. Berg.)

A. Outside of this property I don't recall any in particular, in this district.

Witness excused. [221]

Testimony of J. E. Berg, for Plaintiff.

J. E. BERG, called and sworn as a witness on behalf of the plaintiff, testified as follows:

Direct Examination by Mr. GRAY.

Q. Just state your name, residence and occupation, Mr. Berg.

A. J. E. Berg; Wallace; mine surveyor and engineer.

Q. Did you receive the samples from Mr. Herrick that he took and has testified to and deliver them yourself to an assayer? A. I did.

Q. Did you make the survey to ascertain the precise point at which the footwall, the northern wall of of the Black Tail vein passes out of the east side-line of the Lone Pnie claim?

A. I did.

Mr. GRAY.—I might inquire of counsel, is there any question about this point of 589 feet?

Mr. COLBY.—I don't think there is any controversy over that. That is the point Mr. Searles testified to.

Mr. GRAY.—Yes. Is that the point Mr. Searles testified to?

A. He testified to point A.

Q. And that is how many feet from the south?

A. 589 feet.

(Testimony of William A. Simpkins.)

Q. 589 feet from the southeast corner?

A. Yes, sir.

Witness excused. [222]

Testimony of William A. Simpkins, for Plaintiff.

WILLIAM A. SIMPKINS, called and sworn as a witness on behalf of the plaintiff, testified as follows:

Direct Examination by Mr. GRAY.

Q. Will you state your name, residence and occupation?

A. William A. Simpkins; San Francisco, and I follow the profession of mining engineering.

Q. Where were you educated for your profession, and what experience, and in what capacities?

A. Educated at the University of Michigan, and left there in 1905. Since that time I have followed mining engineering in its various capacities continuously with the exception of about 19 months during 1918 and 1919, up to the present time.

Q. During that time have you had charge of the development of mines and the operation of mines?

A. I have.

Q. Are you familiar with the properties in controversy here situated near Republic, Washington.

A. I am familiar with them.

Q. When did you first examine them recently?

A. In April of the present year.

Q. And you have been there since that time?

A. I have been there on three occasions.

Q. Will you now state in your own way what you observed with reference to those properties and the

(Testimony of William A. Simpkins.)

presence therein of any vein or veins, the position of those veins, their strike and dip, and their relation to the lines of the claims, using any exhibits that are in evidence or any others that [223] you desire to introduce in connection with your testimony?

A. Referring to Plaintiff's Exhibit No. 1, I have visited the Black Tail claim and observed the vein in that claim from about the vicinity of the discovery, the open stope, followed this vein on its outcrop northerly and northwesterly direction to about Station T-875, where the vein is covered with wash. The next point where the vein is observable is in the trench at the south end-line of the Lone Pine claim. From this point it is developed by a small tunnel and a series of trenches to a point just north of Station 557 where it is covered by wash. From there it is again observed in a cut or trench on the north side of the gulch just south of 552, where it is continuously observed around a bend, where the bending of the quartz is plainly observable to the open stopes, and thence northeasterly to the side-line of the Lone Pine claim. There is a little pit right near the side-line where it is covered with wash, but it can be seen underground. The characteristic feature of this vein is its crooked strike and the number of branches which it has. These run in various directions from the foot and hanging wall, and are usually much larger where they leave the vein than at a little distance. Most of them die out in a short distance or at least disappear under the wash. These branches are both in the foot and the hanging. In the center of

(Testimony of William A. Simpkins.)

the claim there are numerous streaks and stringers of quartz running in almost every direction, some of them of fairly good size to be called veins. These have been opened by a series of trenches in a general northeasterly and southwesterly direction. They expose the vein from the discovery cut [224] about the center of the claim. Across the westerly side-line they have been followed continuously, and across the easterly side-line with a few exceptions where they simply jump from one stringer to another. The vein is opened—there is another vein which is exposed near the southwesterly corner of the claim. This vein shows a good strong body of quartz, and is open in a series of trenches and a little tunnel. This is a big vein near the side-line. It gradually diminishes as it runs to the northeast and also to the southwest. In fact, as it goes to the southwest it passes under the railroad cut, and the only thing that I could correlate with that vein on the west side of the railroad cut is a little streak of crushed rock in which there is no quartz whatever. It is possibly six or perhaps 8 inches of crushed material.

Q. How far is it over to that railroad cut where this peters out?

A. From the point of last exposure on the east side of the track to the point where this wall shows on the west side it is 60 feet.

Q. That railroad cut goes down into the solid material, does it?

A. Yes. The vein was exposed in the cut on the east side, shows quartz on that point, gradually get-

(Testimony of William A. Simpkins.)

ting smaller as it goes to the southwest. The same is true as it goes to the northeast and in the little tunnel at the end of the most northeasterly trench the vein exposure is, I should say, about 6 inches, possibly a little less, but I think it is about that large. There are several branches from the vein, [225] a great many in fact, two of which are exposed at a point—

Q. You are now speaking of the main vein?

A. Of the Black Tail vein, yes, the main vein,—at a point in the trench—there is an old trench dug in a northwesterly and thence in a northeasterly direction just below the letter T in the word “trench.” There are two branches from the main vein at that point running into the hanging. One of them is a pretty strong branch where it leaves the vein fully 18 inches of quartz, but is only traced a very few feet, when it dies out or disappears under the wash, getting narrower. Then the next important branches are in the vicinity of 545, where there are two branches running almost due west. These branches unite on their westerly course.

Q. Just point to them.

A. Just above 203-C. Still further to the northeast is another branch running almost due east and west which also dies out as it goes to the west. It is a pretty strong vein where it leaves, about 18 inches of quartz. Immediately opposite on the hanging-wall side of the vein are two very strong branches. These leave the vein at a sharp angle and run out into the hanging, where they turn around to a direction

(Testimony of William A. Simpkins.)

nearly parallel to the main vein and they also die out. These outcrops are exposed underground in a number 1 level, or the No. 1 tunnel of the Pine. [226] At this point there is a sharp turn of at least 90 degrees where the vein turns to the southeast. I would like to make a sketch of that.

Q. Yes, do so. Point out to the Court where you are going to sketch—where it is on the map, I mean.

A. It would be at the point near 243, that is the station in No. 1 tunnel where this vein turns off at right angles. The tunnel runs in a northeasterly direction on the main vein, and there is a branch in the tunnel, something as shown. A vein runs along the main tunnel in this direction northeasterly and a branch running to the east; another branch turning at right angles to it and from that another branch turning again at right angles. These are all good, strong veins. This vein proceeds on. There is a stope at this point which I will mark "X" and that ore has been stoped around this turn on the branch vein. At the point where this stope starts, you can plainly see the branch merging and uniting with the main body of quartz of the principal vein and as the sketch in the lower left-hand corner shows. There is a distinct merging and uniting of the two veins. This is characteristic of the veins in that country. It happens not only in one place but in many cases although this is possibly the greatest turn I have observed. Even in the main vein the turn is not quite so great.

Mr. GRAY.—We offer it in evidence.

(Testimony of William A. Simpkins.)

(The drawing admitted in evidence without objection, marked Plaintiff's Exhibit 18.) [227]

A. (Continuing.) Another characteristic of this vein is its ability to widen in places, show large bodies of quartz, and other places narrow and be nothing but a gouge wall. This is illustrated plainly in the north face of the 500 level of the Last Chance claim at Station 275 where the vein becomes nothing but a gouge wall. There is a series of gouges entering the working both on the foot and hanging wall side. The gouge on the footwall follows the vein for some little distance before the quartz pinches out, but at the face it is mere gouge and no quartz. The same thing is true in two northerly branches of the No. 1 tunnel of the Pine. There is a little quartz at the face northeast of 283, very small, and it has a strong gouge wall on the foot. It is also true in the portion north of station 203 where there are a number of cross fissures, or faults, which displace the vein a very short distance. There the vein becomes mere gouge with just a very small stringer of quartz. The vein, I might say to the southeast of 128-C is pretty strong. It has been stoped in places and as it goes northerly, it gets much smaller until it is practically nothing but gouge.

Mr. COLBY.—You meant southwesterly?

A. Yes, I should say southwesterly. This same vein—possibly the same vein—is opened again in the Pearl tunnel at a somewhat lower elevation. This same condition is found to exist in the vicinity of the sand winze and the gulch winze in the same main vein of the claim where the quartz quite appreciably

(Testimony of William A. Simpkins.)

wedges out against a gouge wall, a short distance south of Station 334 as illustrated by the gulch winze at Station 340. In following this vein from the tunnel [228] at the east line,—south end-line of the Lone Pine claim, the first exposure is a split up vein, many stringers and streaks of quartz on the footwall side of the tunnel. The entire width would be hard to state. It is possibly at least $2\frac{1}{2}$ or possibly three feet in a series of stringers. That runs north a short distance and is displaced by the fault to the east where it is picked up again and follows in the tunnel and then in the cut or trench continuously to a point where the tunnel enters the wash. Here again, it is observed down lower, at a lower elevation in the winze, gulch winze, where it has been followed some eight or ten feet near Station 338. North of that station in the main level No. 2, there is a hole down into the cave, where the material caved down, and in this excavation the quartz is observed in the footwall to be 18 inches thick. This is in the footwall of the open fissure, filled with gravel and sand. The distance from there to the next exposure is about 18 feet. The next exposure is in what is designated as the sand winze, and is about 6 feet lower than the floor of the No. 2 tunnel. From that point northerly, it is exposed in the face of the vein working which runs south from Station $331\frac{1}{2}$. The quartz here has a northeasterly strike and is observed in two distinct stringers. It is followed continuously with the exception of a very small distance, perhaps five or six

(Testimony of William A. Simpkins.)

inches, where I could see no quartz to the point 331½.
[229]

There is a wall passing out to the southwest with the quartz abutting against it. The same quartz is picked up again on the other side of the wall and is followed northeasterly but swings around the curve and I believe continually exposed from there throughout its course, into the Last Chance claim.

Q. Before we leave, what is the greatest distance in the area, between 331 and the gulch winze and workings from it, through which the vein is not exposed—from 331 on, what is the greatest distance?

A. The greatest distance is 18 feet as closely as I can measure it on this map.

Q. Is there any question about the continuity of that vein through there in your judgment?

A. None whatever.

Q. You may proceed now.

A. This vein has been followed down on its dip through various levels, including the 300, 400, 500 and 600, on which there is some drifting and some stoping. The easterly extension in the 300 level is followed to Station 329, where it is displaced by an east and west fault, a very few feet, ten feet, not over that, and again picked up south of the fault and has been drifted on to Station 343, where a branch makes an abrupt turn to an almost due east strike. The quartz is exposed in the raise at 343, and I believe it passes into the footwall. It is not very clearly exposed at that point. There are a few stringers in the south extension of that level, but I believe the

(Testimony of William A. Simpkins.)

main body of quartz is in the footwall of that work. It would be underneath the level at 344. [230] In the No. 4 level, the footwall is shown to turn to a nearly due south strike just south of Station 179, where there is a fairly good footwall gouged. There is some quartz underneath it, but it is broken and shattered. The main vein is passing out the little extension about 50 feet south of 179.

Q. That wall is continuous, though, is it?

A. Yes, sir; it is continuous and unbroken. The 500 level, the quartz has been followed to just about 50 feet south of 220 and the gouge wall is there exposed running in a little west of south direction. In the 600 level, the vein has been followed continuously from the station in the shaft to the face of the drift which is something near 45 feet south of 219, where the vein has a slight turning to the east on the southward extension and passes out the southeast corner of the level.

Q. You have observed the assays and samples taken by Mr. Herrick?

A. I have, some of them.

Q. Did you observe those which were taken of the samples 2882 and 2883, taken from the end-line trench and the end-line tunnel?

A. Yes, I observed them.

Q. And the results of \$11.23 and \$13.14?

A. I noticed those.

Q. Is that commercial ore in that district?

A. I should say that it was.

Q. No, Mr. Simpkins, may I inquire of you con-

(Testimony of William A. Simpkins.)

cerning the appearance of the vein as it bends around from a northwesterly [231] to a southwesterly—to a southeasterly or northwesterly strike?

A. The vein is continuous. It is banded in most cases, and where banded the bending of the ribbon quartz is plainly observable. The footwall is exposed in some places, and in some places the hanging-wall. There are few places where both walls are not exposed, but where they are exposed, there is a very distinct bending of the walls around those turns. I have some photographs of some of those places.

Q. Let us have them marked. We will have them marked Plaintiff's Exhibits 19, 20, 21 and 22. As you speak of the photograph, give its number.

A. Referring to No. 19, I will state that this photograph was taken at Station 552, looking in a northeasterly direction, and shows the footwall of the vein bending around the turn. I might state that this is the sharpest turn noted in that vein.

Q. Will you put some marks showing that bending of the footwall?

A. I will mark "A" on the left-hand side, "A" at the center, and "A" in the lower right-hand corner indicating the footwall of the vein.

At this point the banding is not so evident as in some other parts, but the quartz is plainly depicted and photographed and the footwall. The relative size of the quartz body can be seen in the photograph.

Referring to Photograph No. 20, I will state that this was taken at Station—

(Testimony of William A. Simpkins.)

Q. You said No. 19 was taken at No. 552.

A. I will have to correct that. It was taken at the [232] top of the trench where the letter "T" occurs in the word "trench" on Plaintiff's Exhibit No. 1.

Q. Just mark 19 there.

A. Looking in a northeasterly direction, and that is the sharpest bend in the vein.

Photograph No. 20 was taken at Station No. 552, looking in a northeasterly direction and shows the vein with the banded quartz. The relative size can be seen by referring to the pick. To illustrate the bending of the vein in the stope which is marked "open stope" near Station 544 on Plaintiff's Exhibit No. 1, I tried to get a picture looking in a northeasterly direction, but was unable to see a portion of the stope, standing at that point, because there is such a distinct bending that it is impossible to see the easterly end of the stope. So I took the picture from the easterly end, looking down in a southwesterly direction. It is not a very good photograph because the sun was shining and it was taken almost at the sun.

Q. What is the number? A. It is No. 22.

Q. It shows the bending of the stope around the turn, this being a station about 544 at the lower end of the stope; the picture was taken looking down the side toward the gulch.

Photograph No. 21 was taken near Station 557 on the south side of the gulch looking in a southeasterly direction and shows the quartz exposed at the top of the winze called the "gulch winze." It shows the

(Testimony of William A. Simpkins.)

banding of the quartz, and a portion of the opening where it has been braced up with stulls. [233]

Q. Mr. Simpkins, have you observed the outcroppings near Station 545? A. I have.

Q. What is there there disclosed?

A. There is a large body of quartz; I should say at least 8 feet thick, probably more.

Q. How does it stand with reference to the side of the hill there?

A. It is quite prominent and can be seen for quite a distance. There has been a little work done on it, just a small excavation, not to exceed three or four feet deep, I should say.

Q. Of what vein is that a part of?

A. That is a part of the Black Tail vein.

Q. Were you able to observe it from across the gulch, or the point about the discovery of the Black Tail?

A. I think it can be plainly seen, although I can't recall having noted it particularly.

Q. Now, coming back to the exposures underground. What is the 300 as it is marked in brown and the 400 marked in green, those portions of those two levels, are they upon any vein?

A. No, those are crosscuts which run out to the Surprise vein.

Q. Have you examined the workings in and about Stations 326 and 320, on the 200 level? A. I have.

Q. What did you observe there?

A. At 326 is a large vein of quartz, probably at [234] least 8 feet thick. It gets smaller as it goes

(Testimony of William A. Simpkins.)

southwesterly toward 330. At 330 is a cross-vein or branch, coming in which strikes in a southwesterly direction. It is observed in the little crosscut which is just south of 320 in the No. 2 main crosscut. The end of that can be seen as you look toward the face of the little crosscut.

Q. The end of this little vein?

A. The little vein; yes.

Q. Go on.

A. Then following through the crosscut from 326 to 320, a heavy gouge wall is encountered passing southwesterly, which I believe to be exposed in the little crosscut which runs in a southeasterly direction from the main workings. At this point the quartz is very weak. There is about a foot of quartz, at least 14 inches, on the under side of another gouge wall which follows in an almost south direction from 326, and that is exposed again in the main working toward 331 coming in underneath the gouge. There is about 2 feet of it, although it is not entirely exposed.

Q. You say that is a heavy gouge wall, which is found in the crosscut between 326 and 320?

A. Yes, sir.

Q. And which is again found in the crosscut, well, just south of there?

A. Just south of there.

Q. What is that shown up in the little workings running northwesterly from Station 340?

A. There is a good wall running about north 35 or 30 degrees westerly, standing 75 degrees, dipping

(Testimony of William A. Simpkins.)

toward the [235] east, with 12 inches of crushed quartz and vein material on it?

Q. Do you find it further to the south?

A. But I never seen it beyond that point. It passes into the pillar just to the south of 320.

Q. What intervenes between that and the drift on the vein between 326 and 331?

A. I should say five, possibly six feet of country rock.

Q. **Any other structural feature?**

A. The wall just mentioned which crosses the little crosscut south of 320 which runs in an easterly direction.

Q. Now, then, have you examined the working from 331 around through 331½ to the south face on that working? A. I have.

Q. What do you find in there and what is the course of the vein there?

A. The vein followed the drift at 331 and about 5 feet southerly from 331 where it turns to the southwest against a wall which has been followed along the drift in a southerly direction, and the wall also turns to the southwest. The vein turns against that wall. Immediately adjacent to it on the other side, or to the south, the quartz is observed, the same apparent thickness and character, running in a direction of south 28 degrees east as nearly as I could take it.

Q. Is that quartz from 331 around through this working 331½ continuous?

A. It is continuous with the exception of possibly 5 or 6 inches where I could not trace it. [236]

(Testimony of William A. Simpkins.)

Q. It is the same vein in your judgment.

A. It is the same vein in my judgment. It has pinched down to very fine minute streaks running through the rocks which no doubt are silicified.

Q. Mr. Simpkins, are you familiar with gold quartz veins in California, particularly in Grass Valley?

A. I am.

Q. Is it unusual in your experience there and elsewhere to observe veins bending as you find this Black Tail vein bending and changing its strike?

A. It is a very usual thing. In fact, it is uncommon to find a vein that is straight. They never are for only a short distance. Referring to the Pennsylvania mine in Grass Valley district, I have a distinct recollection of some litigation work which was done on the W. Y. O. D. Claim near the surface in a tunnel where they followed the vein to prove the apex of the Pennsylvania vein. It was followed in a southerly direction, when it turned at right angles and went out the side-line of the claim within a very few feet. I have in mind also a vein in Nevada, in Mineral County, I believe it is, or Nye county, called the Olympic mine, where the vein marks a turn not only at right angles but goes practically around in a circle on its strike.

Q. Are either of those veins situated in rock such as these rocks that you find at Republic?

A. Well, the Grass Valley rocks are not, but the rocks in Nevada, or in this vein I mentioned, are similar to these rocks. It is very common in a great many cases, you see it in many camps. [237]

(Testimony of William A. Simpkins.)

Q. It has already been explained, but I would like to have you explain it yourself again for the record, the difficulty of making an actual connection across the bottom of the gulch between the vein on the south side of the vein and the north side.

A. I might say that when I first visited Republic the No. 2 tunnel working near Station 330 had been advanced to a point somewhere between 330 and 331. It was continued along on the vein toward 331 and to about 5 or 6 feet just past 331, where it apparently hit an open fissure which was filled with sand and gravel. The hanging-wall rock stood in a position about the dip of the vein and was hard rock and is there to-day. This fissure extended up the length of the dip of the vein for some distance and was entirely open, not even filled with gravel or sand. You can climb up in there. It is more in the nature of a cave, but the hanging-wall had the distinct dip of the vein, if it had been followed along here. I assume that this open fissure was the continuation of the vein. And the working was turned slightly to the southeast with the idea of continuing along this fissure to see how far the rock extended. It was something in the neighborhood, so I was afterward informed, that that wall continued in nothing but sand and gravel. At that time I gave instructions to drive a drift through the wash to the opposite side and pick up the quartz to see how far the gravel extended. Then I sunk winzes and connected across in order to strike the continuity of this vein across the gulch. That work was not followed absolutely

(Testimony of William A. Simpkins.)

according to my instructions, but in a general way. They [238] had difficulty—what was actually done was a driving of a tunnel southeasterly to about 338 or possibly a little farther. I wasn't there. But at any rate it was turned back because they found there was no hanging wall so that the vein was intersected just to the northwest of Station 340. I might state as far as I was informed a winze was started from the surface on an incline to the north as it went down on the dip of the vein to follow the vein underneath the wash. This winze caved so that it was abandoned and another winze was started practically on the dip. The first winze inclined to the north; the second winze followed substantially on the dip.

Q. This is the gulch winze?

A. The gulch winze. That was sunk 40 feet and a drift was run to the north which is illustrated as being at 346. And the next time I saw the working it was possibly in the neighborhood north of Station 349. It had caved previously and at that time was practically full of sand and gravel but the hanging-wall was well defined along that drift on the easterly side. Subsequently that drift again caved and another drift was started from 349 out around 350, with the idea of going across and picking up a quartz on the north side of the gulch.

Q. Is that open fissure that was followed down from 334 observable any place in the lower workings there?

A. Yes, it is observed at a point just north of 350, about 16 feet, a little crosscut was turned to the left,

(Testimony of William A. Simpkins.)

which would be in a westerly direction, and sand and gravel was encountered at that point; and then the drift was continued in a northwesterly direction and turns more [239] rapidly to the west and the sand and gravel is again encountered at a distance of approximately 50 feet from 350.

Q. In your judgment does that fissure represent a part of the original vein which has been scoured out and filled up with the gravel?

A. Yes, I believe the vein occupied that fissure.

Cross-examination.

(By Mr. COLBY.)

Q. Mr. Simpkins, I believe that, referring to the surface map, you stated that towards the middle of the claim that you found a great many quartz exposures, stringers and so on, that ran in every direction? A. Practically, yes, sir.

Q. Now, isn't it a fact that they predominately run northeast and southwest, the great majority of them?

A. I think that is true in the area that is exposed, which is through the center of the claim. There is a large area of the claim which is not exposed so you cannot see the fissures. I think that is true, through the center.

Q. Now, I will call your attention to the composite map and to tunnel No. 1, and that cuts a great many of these northeast-southeast stringers that are at least substantially parallel—we don't say that they are absolutely parallel, but substantially so.

A. Yes, all the way from its entrance here, they

(Testimony of William A. Simpkins.)

are even more numerous than they are in the center of the claim.

Q. And at that point they are in the vicinity of the main vein itself? [240]

A. They are in this vicinity, on the hanging-wall side.

Q. Taking the crosscut from 190 to 191, you don't find any such great number of stringers do you?

A. You find quite a few.

Q. Are they shown on this map? A. Yes.

Q. Aren't you pointing there to some fault seams, those indicated by the blue?

A. They constitute veins as much as some of these.

Q. You don't distinguish between your blue coloring and your red? A. Yes, as to quartz only.

Q. Confining ourselves to quartz?

A. There is more quartz running in a northeasterly and southwesterly direction.

Q. And you don't find quartz seams crosscutting the country in a northwest and southeast direction through this working that I have mentioned?

A. Well, a few; they are not so numerous though.

Q. And then, when we come to the Pearl No. 2, you don't find many there, do you?

A. Not so many. There are a few.

Q. By comparison with the other, they are very subordinate in number are they not?

A. I should say they are less; there are not nearly so many.

Q. Can you point out any crosscut that runs in that general direction that does cut a number of seams,

(Testimony of William A. Simpkins.)

taking, [241] for instance, the crosscut that runs from the Surprise No. 2 shaft over, we will say to the point 204. We still find these seams and quartz stringers running generally parallel with these others that we have mentioned in the middle of the claim, do we not?

A. Yes, that is true. While there are some, they are not as prominent as the northeast ones.

Q. Now, referring to the discovery trench, you examined that carefully, did you? A. I did.

Q. And what did you find disclosed in the trench?

A. I found three streaks in that trench, three little veinlets or veins, one of which has been caved since that examination, but the principal one of which trenches were started and extended a certain distance, I measured 16 inches of quartz.

Q. And as you came westerly a short distance from the trench, say between 6 and 10 feet, does that quartz narrow or widen?

A. Well, I would say that it widens slightly. I didn't measure it at that point, but I did measure it at various places. At some places I got up to 24 inches, which I believe is the greatest amount.

Q. You can get 24 inches of quartz somewhere along in that discovery vein?

A. Well, if that is the one, you can get 24 inches of quartz in some of these stringers or streaks.
[242]

Q. Now, I believe you state that you can follow these continuously, that is some quartz stringers,—

(Testimony of William A. Simpkins.)

at least quartz, continues from the discovery cut to the westerly side-line? A. Yes.

Q. And the easterly side-line you jump from one stringer to another in how many cases do you say?

A. At least three.

Q. And these stringers were all continuous in the same general direction were they not?

A. Yes, they turn out of the trench in a general direction.

Q. Have you had any great experience in the examination of mining claims?

A. I wouldn't call it great. I have had some experience.

Q. According to my observation, it has been considerable. How about surveying mining claims, have you ever surveyed mining claims for patent?

A. Yes, I guess I have. Not very many though. Yes I know I have.

Q. Have you ever observed exposures, discovery exposures in this claim? A. Yes.

Q. How does this compare with many of the exposures you find in mining claims?

A. Well, it is just as good as possibly the majority of them.

Q. Have you ever examined other claims in that [243] particular district with the idea of ascertaining the discoveries that they were based upon?

A. The only one in this district is the Black Tail. I was not absolutely sure that that was the discovery at the time I looked at it, but it was certainly a very good vein exposed in that cut or open stope.

(Testimony of William A. Simpkins.)

Q. Now, I see that you have on this map here—are you responsible for the coloring of these veins on this map? A. Yes.

Q. You have quite a decided vein running north-east and southwest parallel to this general system through the north shaft? A. Yes.

Q. Where is that exposed?

A. I don't think it is exposed on the surface but it was put on there because the stopes underneath and the workings denoted that the vein runs in that direction and so we just put it on, knowing that the vein was there.

Q. You didn't find any exposure anywhere near the surface?

A. No, I don't think it is exposed anywhere near the surface.

Q. As a matter of fact, is there any vein exposed in that shaft for many feet down?

A. I haven't seen any in it.

Q. Have you seen any quartz in the dump that came from that shaft?

A. I think I have, yes, quite a bit.

Q. You are quite sure of that? [244]

A. Yes, I feel quite sure of it.

Q. And they would be exposed there to-day or your examinations have been so recent that the washing of the elements and so on wouldn't change that condition?

A. I wouldn't be positive about that. I didn't look at it particularly but I noted that vein at that time because I knew that below there they had

(Testimony of William A. Simpkins.)

stoped that and that this shaft had probably been on it.

Q. As a matter of fact, isn't that shaft a ventilating shaft? A. I don't know about that.

Q. So you wouldn't be sure about that quartz exposure?

A. I am pretty well satisfied that there was no quartz on the surface but there is quartz down lower.

Q. Now, you have had considerable experience with faulting veins, have you not, where veins have been cut off by faults or fractures that cross the country? A. I have had some experience, yes.

Q. Has it ever been your experience that where a vein is cut across a fault in that way that the ends of the segments of the vein that are broken by the fault and cut by it have been turned and dragged slightly in the opposite direction to correspond with the movement on the fault?

A. That is true in a great many cases and in many cases it is not true. It is a very difficult matter to observe the drag.

Q. And very frequently you have a sort of a toe [245] turning around where the segment butts up against the fault?

A. Yes, usually designated as drag.

Q. And in many cases you have an appreciable bend of the vein itself for a considerable distance back?

A. Yes, in some cases a very pronounced bending.

Q. Now, coming to these exposures that you have

(Testimony of William A. Simpkins.)

testified to on the southern portion and I will refer particularly to this 10-foot detail for the present, what have you out here in the tunnel that runs in beyond the large winze, beyond station 342?

A. The vein at station 342, is exposed in a hole into the hanging-wall from the drift and is the last point at which it can be observed. There is a wall or fault on this map showing several feet farther southeast but as a matter of fact having a rather strong dip to the southeast, which may displace it. At any rate it is not on this working beyond Station 342 or just a few feet perhaps.

Q. Referring to the working south of 331½ as you come along from Station 321, isn't there a considerable exposure of quartz along the right hand side of the level as you come towards the end of this working?

A. Yes, there is a pretty good exposure.

Q. What would you say is the thickness of that exposure?

A. Well, it isn't entirely exposed along about 321 but I should say at least 2 feet of it possibly—well, I think 2 feet. [246]

Q. And what becomes of this quartz?

A. It passes out to the little drift which has been extended practically south from Station 331½.

Q. Does any of it turn into the side to the west?

A. There is a small amount of quartz running into the wall at 331½ and another exposure of this same quartz just beyond the wall—in fact, they come right together with a wall between on the

(Testimony of William A. Simpkins.)

southeastern side. That is the quartz which has been followed southerly in the working you mentioned.

Q. Now, referring to the quartz exposures that are shown in the trenches that have been put on here in pencil on this Exhibit 4, I understood you to testify that there was some considerable veins shown in some of these trenches.

A. A very good vein.

Q. Where do you find, as you come northeasterly on this most northeasterly vein, the principal working being T-901?

A. A little tunnel running northerly from 901 and the quartz is observed in the bottom of the trench which connects with this tunnel on—well, I couldn't measure it all, but I would say there is about a foot of ore in that trench. It gradually narrows and appears to turn to the east as you follow it along the bottom of the trench, although I am not real sure that it does turn to the east, but anyway on the face of the tunnel there is a small streak running north 18 degrees east, as I make it, about 6 inches thick, not to exceed 6 inches. [247]

Q. Is there more quartz on the floor on the extreme right-hand side at the bottom?

A. Well, the rock itself is on the floor on the right-hand side, but up above there is a little excavation on the side of the working which would be on the east side and there is some quartz in there, but whether that is the same quartz as I saw down on

(Testimony of William A. Simpkins.)

the floor, I am not sure. It is not very well exposed in that working.

Q. What is the width of this quartz that is shown in tunnel No. 838?

A. Well, I couldn't measure the full width of it, but I would say at least 3 feet of quartz there. These trenches don't expose it very well.

Q. Now, coming to the Black Tail claim and taking the composite map, as you come northerly along that vein in the last exposure that you see in the vicinity of the point 231, what is the appearance of the vein at that point?

A. Well, the vein that crosses the crosscut at a rather acute angle at Station 231 and the working has been filled I should say halfway up, 3 feet high with debris and soil. The vein is not entirely exposed as I observed it along the side of the working going into the northwest at quite an acute angle with the crosscut.

Q. As you saw that vein there, isn't it weakening considerable from the magnitude it has in the workings a short distance back?

A. Well, it may have been weakening a little, but I don't think so. [248]

Q. Don't you think it is pretty well pinched out at that point?

A. No, I think that is a pretty good vein. The reason you don't see it very well is because you are looking at it at an acute angle with the level. An actual measurement across that quartz would be I think substantially the same as it is in the working at 231-B.

(Testimony of William A. Simpkins.)

Q. Now, take the surface map. As this vein comes downward, the Black Tail, on the surface, the last exposure I understand is in the vicinity of T-875, is it not? A. Yes.

Q. Now, the normal migration of that apex, if it continues in the same direction that you have indicated—bends for how many feet, is that estimated?

A. About 380 feet.

Q. If it persisted in that same general direction what would be the migration of that apex normally?

A. It would be thrown slightly to the east.

Q. On your connection, your dotted connection here, it has been turned slightly to the west.

A. Slightly. Well, not much—yes, I guess it is a little.

Whereupon an adjournment was taken until 10 o'clock A. M., Wednesday, August 25, 1920. [249]

Wednesday, August 25, 1920, 10:00 A. M.

Trial resumed.

WILLIAM A. SIMPKINS resumed the stand and testified as follows:

Cross-examination (Resumed).

(By Mr. COLBY.)

Q. Mr. Simpkins, in your direct examination yesterday, you drew a sketch here which has been labeled the Plaintiff's Exhibit 18.

A. Yes, sir.

Q. And that was intended to represent the plot showing that appears on this composite map Exhibit 2?

(Testimony of William A. Simpkins.)

A. It purports to represent the conditions existing in the No. 1 tunnel in the vicinity of Station 243. It is not an accurate sketch, however.

Q. What is this little bend in the view?

A. There is a cross cut or drift, as it happens to be, running from the southeast and from that another drift running in a general easterly direction.

Q. And it was your idea to compare that little occurrence with the turn that you believe the Black Tail vein has taken?

A. No, I merely mean to make that illustration to show that other turns occur in the property.

Q. Isn't that occurrence more in the nature of the horse or inclusion? A. No, not in my opinion.

Q. Isn't it a fact that they mined that right down to the junction below?

A. Well, it was a branch that departs from the main [250] vein as you go upward, so that if the surface was at the same elevation as the top of the hill it would probably be a much greater distance from the main vein than it is at this level. At the No. 2 level it is much closer, and it might represent a branch.

Q. Those spurs departing from the main vein in that magnitude are not infrequent occurrences, are they?

A. No, particularly not in this mountain.

Q. Coming back to the surface map showing the vein crossing thru the discovery cut, I believe you had considerable experience in tracing the apex in what is called the 16 to 1 mine in the Allaghany district? A. Yes, sir.

(Testimony of William A. Simpkins.)

Q. Did you find the exposures of that apex on the surface more prominent than you have found the vein here passing thru the discovery cut of the 16 to 1—

A. I was just trying to think where the discovery cut is in that claim—in the south end, isn't it?

Q. Somewhere in the south end; yes, sir.

A. Well, I cannot just recall the discovery cut in that vein. I do recall that the vein was very weak—

The COURT.—That comparison may do me some good, but it won't help the Court of Appeals.

A. The vein on the apex of the 16 to 1 was extremely weak and in many places was comparable to this vein where it showed a tremendous body of quartz underneath and pinched down to a mere seam which it did on the surface. [251]

Q. For a considerable distance along the apex and if you had sunk from various points on the apex in depth the results would have been very discouraging so far as appearances are concerned?

The COURT.—You mean in this case?

Mr. COLBY.—In the 16 to 1 case?

A. I do not hardly think that is true. The vein gets stronger as you go down.

Q. I mean there are many places where if you went down you would have found a comparatively weak condition?

A. Yes, sir. Another thing, though, that is not comparable in this case which exists in the 16 to 1 is that—

(Testimony of William A. Simpkins.)

The COURT.—I do not want to try the 16 to 1 case again. Confine yourself to this one. [252]

Mr. GRAY.—I think Mr. Colby and Mr. Simpkins ought to know all about it.

Mr. COLBY.—We tried that very satisfactorily at one time, with Mr. Simpkins' help and assistance.

Q. You have described this exposure of quartz that appears in the trench at points T-838 to T-840 and extending southwesterly, and it is your idea that they pinch out as you go southwesterly, and face away? A. It certainly does.

Q. Did you discover any fault in a southwesterly direction in the vicinity of that railroad cut?

A. I don't recall it.

Q. And along where the extension of that vein would exist if it kept on?

A. No, I don't recall any. There is an exposure on the west side of the track which has the same strike and the same direction as the last exposure of the vein, which I took to be the extension of it, and the only thing that I could find on the west side which would correspond with it.

Q. Do you know anything about the values that were found in that vein? A. Nothing whatever.

Mr. COLBY.—Mr. Gray, I understand that your people have taken some assays of that vein. Would you object to producing those?

Mr. GRAY.—Where, Mr. Colby?

Mr. COLBY.—Of these cuts; the vein that appears in these cuts.

Mr. GRAY.—Do you know of any being taken? [253]

(Testimony of William A. Simpkins.)

A. I don't know that any were taken.

Mr. COLBY.—We understood there were some taken. A. Not to my knowledge.

Mr. GRAY.—That was in the southwest corner.

Mr. COLBY.—We are in this position; we should of course have had that sample before we left, but it is one of the things that I overlooked. We have a hand sample that Mr. Lakes took and I have had it assayed since we came down here and we would like to introduce that although it is not exactly in accordance with the terms of the stipulation.

Q. Now, coming to the composite map again, Exhibit 2, you found a vein exposure crossing the tunnel approximately underneath the west side line of the Lone Pine and a little west of Station 321?

A. Yes, there is such a vein.

Q. What did you find there?

A. There is a gouge wall dipping to the west with quartz in it. There is a fair showing of quartz in it. There is a fair showing of quartz there.

Q. Dipping to the west?

A. Almost exactly on the side line—dipping to the east I should have said.

Q. And what is the width of that exposure? I would like to get the exact dip and strike of that and any further details you have.

A. The vein has a dip of 50 degrees to the east and 12 inches of quartz.

Q. And its strike?

A. Well, its strike is about as shown, which would be [254] N. about 30 degrees west. It curves

(Testimony of William A. Simpkins.)

somewhat and assumes a more nearly due south direction as it proceeds southerly.

Q. What is the average dip of this Black Tail vein here? Just give it roughly, if you can recollect.

A. I should say in the neighborhood of 45 to 50 degrees east.

Q. That maintains that average dip pretty well, does it, as it proceeds?

A. Well, yes, it is a more or less uniform vein in its dip.

Q. Now, I think you have what you call an exposure of this Black Tail in the vicinity of T-841, haven't you?

A. Yes, sir; right on the end-line.

Q. And what is the elevation at that point?

A. You mean in reference to the surface?

Q. Yes. I mean the sea level elevation.

A. I don't know that I can give you that.

Q. Approximately, is all I want.

A. Well, it is—

Q. Can't you give this from the contour line?

A. Well, yes, I could give it approximately. Well, it is somewhere around about 2885, I should say.

Q. And what is the elevation of your 600 level?

A. 2432 at the shaft.

Q. Now, will you project the position which this vein that you call the Black Tail has where it crosses the end-line, would intersect or would appear on the 600 level, if it were projected downward? [255]

(Testimony of William A. Simpkins.)

A. You want me to do that in court?

Q. Yes. What is the difference in elevation?

A. About 400 feet; a little more than 400 feet.

Q. And on a dip of 45 degrees what would the vertical displacement be or what would its position be with reference to the point that you start from on the side-line, if the difference in elevation is 400 feet? A. Well, it would be 400 feet.

Q. And will you measure 400 feet in the direction of the dip from where the Black Tail vein is supposed to cross the side-line?

A. My recollection is that that vein goes steeper than that.

Q. 400 feet?

A. Four hundred feet would be approximately at the side-line of the Apex Fraction Lode there, near corner No. 2 of the Pine claim.

Q. The top of that vein, if it were constant and 45 degrees as you state, taking into consideration the difference in elevation, would carry it from a point where as you state the apex crosses the end-line of the claim over almost to the side-line, would it not?

A. Yes, it would be approximately at the east side-line of the Apex Fraction claim.

Q. And you would have the 600 level extending back underneath that vein, if it were assumed that that is true, for a large portion of its distance, would you not?

A. Yes, assuming that those things held that depth. [256]

(Testimony of William A. Simpkins.)

Q. That is, on the assumptions that I have stated.

A. Yes.

Q. I don't want to mislead into stating anything that is not so. Now, I would like to have you point out on this Plaintiff's Exhibit 2 the postmineral faults that you have indicated here, especially along the exposures of the main stoped vein carrying the levels from 1 to 600.

A. Well, there are some in the main vein; there was some postmineral faulting along the main vein near Station 326 which has been followed out through the cross-cut, I think it is the same, south of Station 320 a little crosscut the end of which is near Station 330. This fault again appears, I believe it to be the same, near the letter E in the word "Pine" on the 200-foot level. It would be directly below the 2850 contour. There is postmineral faulting along the—I am not dead sure of it, but I think it is postmineral faulting along the hanging-wall of the vein near Station 340, close to the gulch winze. Near Station 331½ there is a postmineral fault, a small one, which passes out of the drift. And then there are a few little cross-faults in the south end of the No. 2 tunnel, between Station 342 and 348, also shown in the end-line tunnel near T-844.

Q. Now, taking some of the other levels?

A. In the 300 level there is one just south of Station 329, also at the end of the westerly crosscut from Station 329, evidently some postmineral faulting along the vein. Just how much I could not say.

(Testimony of William A. Simpkins.)

In the 4th level [257] near station—

Q. To save time, I will ask you if these blue lines indicated here at the southern extremity, the southwestern extremities of the 500 and 600 levels, and at the northeastern extremity of 500, if those blue lines there indicate postmineral faults.

A. I think there has been some postmineral movement on those.

Q. And would that not, in your opinion, account for a portion of the apparent weakening of the vein in those directions, and the disappearance of the vein into the walls of the workings?

A. It would account for perhaps some of it, but not all of it.

Redirect Examination.

(By Mr. GRAY.)

Q. Mr. Simpkins, what is the dip of the vein in the gulch winze?

A. It is about 75 degrees on an average; it is rolling.

Q. Whereabouts is that? Just point that out.

A. It is just north of Station 340; the hanging-wall is well exposed, and it is rather irregular but quite steep.

Q. And all of 75 degrees?

A. Roughly, 75 degrees.

Q. That would bring it on the 600 level about where?

A. I could not say offhand. It would be somewhere west of the present 600. [258]

Q. Where is west? A. Here.

(Testimony of William A. Simpkins.)

Q. What is the dip of the vein, as nearly as you can get at it, near the end-line?

A. It took a dip there of 57 degrees. It is a little difficult to take it in that tunnel. The veins are irregular and small, but it is somewhat steeper down lower in the gulch.

Q. There is one thing I neglected to introduce in your testimony yesterday. You have a sketch which you made on the ground of those stringers up on the surface? A. Yes.

Q. A detailed sketch?

A. Yes, I have a detailed sketch made on the scale of 10 feet to the inch.

Q. Whereabouts is this taken?

A. That was taken near Station 591.

Q. Just point to that.

A. Including the trench marked T-811.

(Sketch marked Plaintiff's Exhibit 23 and admitted in evidence and made a part hereof.)

Q. What does it show, Mr. Simpkins, generally?

A. It is a representation of the trenches which were dug at the time I visited the mine in April. The first trench running from the discovery cut to Station 591, and the second trench— [259]

The COURT.—These are all shown on that, are they?

A. Yes, sir. (Continuing.)—designated as T-811. and it shows the conditions between these two trenches and including a portion of each trench.

Q. Just show his Honor in detail how those stringers—one is followed over to another in the

(Testimony of William A. Simpkins.)

development of this quartz to the westerly.

A. The trench which comes down the hill to Station 591 shows a stringer of quartz which continues on through another stringer to a third one which has a general easterly direction. There are three other stringers, or rather a continuation of the first one around a little cliff and down over the face of this cliff to about the same points as the first one. And a third stringer runs in a general southerly direction. These have all been cut off, with the exception of one very small one, by a north-south stringer, or northwesterly and southeasterly stringer. Then there is a space of about 5 or 6 feet, where another stringer is picked up in the trench which continues down the hill. This stringer comes in from the north side of the trench and continues on down the hill.

Q. Is that typical of the way these stringers meet one another?

A. Yes, it is a fairly typical example. Besides, the quartz is indicated in pencil marks.

Q. You were asked by Mr. Colby if you knew where there were any of these right angle turns that he has spoken of. Have you observed down on the Black Tail workings on the [260] Black Tail claim any such condition? A. Yes.

Q. Where?

A. There is one in the Black Tail tunnel, in the vicinity of the Black Tail winze as shown on Plaintiff's Exhibit 2. Q. Point that out.

A. That is shown in three little crosscuts, or

(Testimony of William A. Simpkins.)

rather two crosscuts, one at a crosscut between Station 210 and 209 where there is an exposure of quartz, which is again shown in the main part of the tunnel, and then by a little crosscut between Station 209 and 205 where it is shown in the face of the crosscut about 8 feet long. It is next observed in the main portion of the tunnel running from Station 205 to 232 where it abuts against a fault.

Q. Just dot that on there as that veinlet or vein.

A. (Witness does as requested.)

Q. Just put an S on that. The dotted line, then, that you have placed there, from S to S, represents the course of that quartz, does it? A. It does.

Q. Now, with reference to these so-called post-mineral faults along the course of the vein, are they faults of any displacement?

A. Very little, if any.

Q. What has caused the gouge there that you remarked?

A. Possibly a slipping along the footwall or the hanging-wall, as the case may be, small faults.

[261]

Recross-examination.

(By Mr. COLBY.)

Q. Mr. Simpkins, how do you know how much displacement there is along these faults?

A. Well, it is indicated by the amount of gouge. There is very little gouge in most places. In certain instances it is heavier, of course it is heavier than in others. The vein in most cases is what we would

(Testimony of William A. Simpkins.)

call a tight vein. There isn't very much gouge. There has been some movement within the vein.

Q. That is characteristic of most of these north-east southwest veins, is it not, that they are rather tight veins? A. Yes.

Q. Even underground. You take the No. 4 vein; that does not show much movement or selvage?

A. There is some gouge up in that country.

Q. But I mean comparatively speaking.

A. Well, toward the north end it is more pronounced, the north end of these two workings, 283 and 203.

Q. But I am speaking generally now, and not of any particular place.

A. Generally, I should say there is not much movement along the vein.

Q. Now, referring to this little sketch that you made, and which is marked Exhibit 23, that was taken in the vicinity of 591 down to trench 811, I believe? A. Yes.

Q. And that is not on the stringer or seam of quartz which has been followed from the discovery cut down to the side-line, is it? [262]

A. No, it is on the one that was first attempted.

Q. It is on a branch?

A. Yes, where the first trenches were dug.

Q. And it is rather an erratic occurrence, is it not? A. I should say they are all erratic.

Q. But if you had found one on the main seam that ran down on the side-line, you would rather

(Testimony of William A. Simpkins.)

take it, wouldn't you, than the one that did not go down the side-line?

A. Well, I would not call that a main seam.

Q. Eliminating the designation that I have given it, if you had found one on the seam that came from the discovery cut down to the side-line, you would prefer to have an erratic occurrence like this shown there than one on a branch seam?

A. No, I made that sketch before those other trenches were dug.

Q. You have some northwest-southeast stringers in there. I think I have already examined you on that. Those are not of as frequent occurrence as the main parallel veins in the other direction, are they?

A. Well, they are not of as frequent occurrence as the main vein. They are fully as large as the majority of those which run northeasterly, but there are not as many of them.

Q. And they have not the persistence?

A. As to that I could not say, because there have been no trenches dug on it.

Q. I will take you underground again, and if you think they are as frequent I will ask you to point them out [263] again on these levels.

The COURT.—Have you been over that?

Mr. COLBY.—Yes, he has been over that, but he states again that he has found them of as frequent occurrence.

The COURT.—You examined him fully on that yesterday afternoon.

(Testimony of William A. Simpkins.)

Mr. COLBY.—Then I will not carry that portion of the examination any further. I misunderstood you, Mr. Simpkins.

A. I did not intend to say that they were of as frequent occurrence as the northeasterly stringers.

Mr. COLBY.—That is all.

Mr. GRAY.—I offer this patent of the Lone Pine claim.

Mr. COLBY.—We do not deny the title, of course.

(Patent marked Plaintiff's Exhibit 24, admitted in evidence and is made a part hereof.)

Witness excused.

Mr. GRAY.—That is all. We rest.

Mr. COLBY.—I do not believe we called the Court's attention to the question we spoke about this morning.

Mr. GRAY.—Yes. We are simply trying out the question of title, and not any question of any ore which has been removed. That has been understood.

Mr. COLBY.—We admit that we have removed the ore that they claim.

Mr. GRAY.—And within the planes. [264]

Mr. COLBY.—And within the vertical planes of the claim that is owned by the defendant.

Now, may it please the Court, the only justification that I have in making an opening statement for the defendant is the fact that I feel that there should be presented to your Honor in complete and concise form the exact defenses and the nature of

the testimony that will be introduced in support of those defenses by the defendant. Your Honor has already gathered from the cross-examination here, the testimony that has been given, a knowledge of what those defenses are. But in order that they may be brought prominently before your Honor before we introduce our testimony I am going to take up a few minutes in so conveying to your Honor the ideas which we have in mind. Now, I would like to arrange our exhibits, since I will refer to them in the course of this examination, and I think that it would be very much easier for the testimony to be given if those exhibits were placed on the level of your Honor's chair.

The COURT.—Very well.

(Mr. COLBY arranges exhibits.) [265]

Most of the testimony will be directed to this model because a model of this character enables one to observe three dimensions, whereas a map only enables us to observe two dimensions and for that reason I think most of our testimony will be directed to it.

Your Honor will observe over the surface here these wires represent the contours and configurations of the surface on the ground by the general walls of the topography and you can get some idea of the surface conditions that appear on the ground in the vicinity of these mines.

The claim lines are based upon the map. The Lone Pine claim does not appear in its full size but does appear on the maps, but the greater portion is

given, the portion to which testimony has been given. That is true also as to the Black Tail claim. The entire claim does not appear, but only that portion in which is set out the mine workings; but the territory that is particularly in dispute here is all shown on this model. Not only the surface appearance but the underground exposures, as nearly as they can be represented on a model of this scale.

There are two defenses which the defendant relies upon in this case, and one will be that the discovery of the claim which appears at this point and which has been previously testified to is the real discovery of the vein; that that was the first point where the locator found his quartz in place and identified it by placing his location notice in the immediate vicinity, not more than six or ten feet away. That is borne out by the subsequent events, such as the patent survey [266] calling this the discovery upon the patent, that it appears as the discovery cut and in the patent itself, it is referred to as the discovery cut. This state of facts we contend is conclusive on this question, in view of the fact that the vein passes through near the exposure of quartz extending in either direction, can be carried until it crosses both side-lines.

Now, on that particular feature of the case and on that defense, some testimony was given on the other side to the effect that this vein here was the vein of first discovery; and we will show that that is not the case, but that the discoverer of this claim, Mr. Phil Creasol, did not see Mr. Welty out there upon the Black Tail ground, as Mr. Welty testified to, the

evening of the day on which he made his Lone Pine location. Mr. Creasol came from a camp way down on the San Poil somewhere below the town of Republic, or one of the branches of the San Poil, came up across this range that morning with one of the other locators, a Mr. Ryan, and they located various claims as they went along; that when they got opposite this hill upon which the Lone Pine is situated, they separated, Mr. Ryan coming across and over into the vicinity, of this Black Tail ground, whereas Mr. Creasol went around and crossed beyond the end of the claim, of the present Lone Pine, and came on to the claim from the opposite direction from the one which it is contended by the plaintiff the locator approached his discovery point and that it was impossible for him to have seen this vein before he posted his notice of discovery and made his discovery. Not only is that a fact, [267] as we will show, but when he came down from this point and after having made the discovery, it was getting towards dark and Mr. Ryan was calling to him from this hill over here to bring the axe over, he came down from this point in some way without noticing there was a vein there at all, and the next day he come up with Mr. Welty and Mr. Ryan—Mr. Welty the man who testified here and who is the witness on location—came up and staked out the Lone Pine claim; that they did not know even at that time that this vein existed because this country is covered,—the rocks, to a great extent with likens and decomposition and discolored in such a way that no one, not even experts who have the

greatest insight into the bowels of the earth, could tell that that was a vein without chipping it. And that there are exposures of country rock, that is not veins that carry quartz in it, some of these veinlets, going down the side-line cross over but there is no evidence of any exposure here, there is no information conveyed to the locator that it is quartz unless it happens to be exposed as such and either broken off or weathered off so that the quartz appears.

We will also show that it was nearly a month after the location was made that any work was done on this other vein, instead of being two or three days, as it has been testified to, we will show that that was impossible, because Mr. Creasor after making this location went to a considerable distance to have his location notice recorded without coming back upon the vein, and that it would have been impossible to have carried on this work in the meantime, and when he came back, they did start some work, and it was many days later, so that [268] by no possibility could this vein be identified as a discovery vein, and the work that was done there identified as discovery work.

We will also show as a second defense, that even conceding by any possible stretch of the imagination that this were the discovery vein, that this vein crosses both of the side-lines of the claim located, and that this extension which has been pointed out or this occurrence in these cuts and this incline over on the southwest corner of the claim is a bold, defined vein in the sense that it is a considerable width and has a considerable strength and value, and that

it crosses out through the claim and is carried through that side-line, maintaining its integrity and its persistence and its magnitude. That that vein or that exposure there is almost in line, such a slight variation that no one would ever think except by way of controversy of denying that it had practically the same strike and dip as this main vein and would be the natural thing which everyone would expect to find nominally as the continuation of a vein going on.

We will also show that this main vein was worked for some 20-odd years, nearly a quarter of a century, before anybody conceived of the idea that it turned at right angles *at* became a part of the Black Tail vein.

We will show that there are occurrences here which cross this vein, there are vein occurrences, quartz appearing in places, which I have spoken of, where these little strips which are not intended to represent the actual vein, but simply are a *contention*, but these strips do actually represent the vein that was found in the ground and extracted, we will show that [269] there was a great breaking up in that country between them, dislocation by faults and by crosses, and that there are cross-exposures of faults, as has been contended by the opposition, and that those cross-exposures, however, can be related to another system of veins. That there are two prominent systems of veins in this country that have been generally recognized, one the northeast and southwest on which the Lone Pine No. 2 is the major one, and the No. 4 is a minor one, and No. 3

and other smaller veins in here are parts of the same series. We will show there is a system of veins corresponding to the Black Tail vein also in this country. The Surprise vein which has been called to your attention, and which lies as I represent by my stick here, the yellow color on this shaft and also on this level indicating the exposure of the Surprise vein. To a great extent, some two or three thousand feet, it has been exposed. That the Black Tail vein is a similar vein, a bigger and more powerful vein. That this Black Tail vein extends generally in the same direction and while it has not been traced across a side-line according to our views, we will show that those exposures which the opposition have found and testified to, coming up to the end-line, I should say—I used the word side-line,—that they are of minor insignificance; that they are sporadic occurrences of the character which have been designated as filling in this country, which cross at an angle to the direction which it should be in if it is a part of this Black Tail vein. We will not deny that there is some likelihood that this Black Tail vein continues on and could, perhaps, on greater exploration, if it is not too much disintegrated and [270] disorganized by this broken ore condition here, could be found continuing through, because it compares in many places to the northwest southeast system of veins which I have already mentioned.

Now, we find here on this model a little yellow winze. You do not see that winze on any of the exhibits of the other side. In fact, it was only shown by a winze designation on their surface

maps, since they have no model which would indicate its position in depth. That little winze there we will show by men who worked in it and who extracted the ore that was taken from it, contained a vein of considerable magnitude, a vein that was in many ways comparable to what was found over there towards the Black Tail, and whether it is or not we do not know, it has the same direction and it is a part of the northwest and southeast system. It is in the footwall of this main vein, the main No. 2 vein, which is shown here, this red place, and has passed beyond it, unquestionably going in a northwesterly direction. Now, what becomes of it beyond that, we do not know, except that it is a vein of considerable persistence and should continue for some distance beyond. We do find in the Pearl tunnel here which is indicated as I hold my pointer, a vein crossing which has a somewhat similar character as far as width is concerned, a foot or more of quartz and vein material, also accompanied by a considerable gauge, *as is* the vein which is in this little incline which I previously mentioned, and it is a good reasonable supposition that that is a continuation of the same vein because those crosscuts which your Honor sees passing in a [271] northeasterly direction through the country would certainly expose all vein conditions or crosses in that territory, and therefore the probability is that this may be a part of that vein if you care to project it that far. It is the only thing at least that occurs in that direction, and it is something that is comparable to these northwest southeast veins.

Now, as a result of these complicated conditions of one vein system crossing another, of which there is no question, as we shall show from the testimony, because the facts are there, the veins are in the ground, and a considerable faulting through this area here, we find two veins intersecting each other, with faulting in that immediate vicinity. That gives you a very complex country condition and one difficult to work out, and the difficulties have been doubly magnified by reason of the existence of this little gulch here. That little gulch has carried down considerable wash so that you have to go to a depth of a great many feet from the surface before you can get these vein exposures, and the whole complication that is before your Honor, has to a large extent resulted from that combination of circumstances which we cannot avoid, and both sides endeavored as best we could to clear it up so that it might be presented here in as clear a manner as possible.

We will show that a vein of this character cutting through the country as this vein does on its strike and the outcrop of it following along a steep hillside like this, the apex will necessarily migrate to the south, that it would be unavoidable, because of those physical conditions. In one of [272] these trenches down here, we strike one of these cross veins. It is followed right on and considered a part of this apex of the Lone Pine No. 2 vein. Then we will show that there is quartz existing in such condition on the No. 2 level which is colored

here in red in the vicinity of Station 331 which if continued on would unquestionably connect up with this exposure of quartz of considerable dimensions which I have already mentioned, which comes across these cuts and across the side-line of the claim. So I say if we take the two horns of the dilemma, if in the first place we consider this discovery vein, the case is won by reason of the discovery vein crossing the side-lines, and we will prove that the No. 2 Pine vein also crosses the side-lines by reason of the extension which we find normally continuing on in the same strike dip beyond. And we will show that a vein of this magnitude, it would be of the highest improbability that it should turn and become the comparatively weak character of vein which has attempted to be carried across and the exposures which have been attempted to be carried across the end-line of the Lone Pine claim in a southerly direction. All I can say of that is that it reminds me very much as if the Black Tail was trying to widen this big dome over here.

That is the comparison between the two veins. I think I have covered all that is necessary in the opening statement, and we will proceed with our testimony. [273]

Testimony of Albert Burch, for Plaintiff.

ALBERT BURCH, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination.

(By Mr. COLBY.)

Q. Mr. Burch, what is your profession?

(Testimony of Albert Burch.)

A. Mining engineer.

Q. And how long have you followed that profession? A. A little more than thirty-one years.

Q. What has been your experience during that period of time? Narrate briefly, if you will, to the Court what work you have been engaged in along the line of your profession.

A. In the beginning I commenced simply as a surveyor for the first two or three years, and since then I have operated upon my own account and have been superintendent of some rather important mines, manager of others and consulting engineer for others, having made a large number of mine examinations for prospective purchasers in all of the western mining states of the United States, Alaska, British Columbia, Yukon territory, Mexico and Cuba.

Q. You were at one time I believe manager of the Bunker Hill and Sullivan mines over in Idaho?

A. Yes, sir; I was superintendent of the Bunker Hill & Sullivan for a period of between four and five years, and was manager for two years after that and then was consulting engineer for several years following.

Q. I believe you were also manager at one time of the Goldfield Consolidated mine in Nevada? [274]

A. Yes, sir; I was consulting engineer for the Goldfield Consolidated for a year and manager for two years, and then was consulting engineer again for six months after that.

Q. Is that a mine of considerable magnitude?

(Testimony of Albert Burch.)

A. It was at that time.

Q. How much has been its total production, roughly?

A. Around sixty-five million dollars.

Q. I will not go into detail with the rest of your mining experience, but I will ask you if you are familiar with any of the mines of Republic?

A. I am familiar with the Lone Pine and with the Black Tail.

Q. You have made an examination of those mines, have you?

A. Yes, sir; I made an examination of those mines in July of this year, and in this month, August.

Q. You made two different trips for the purpose of examination? A. I did; yes, sir.

Q. And did you examine that territory carefully with the idea of finding out what the vein occurrences were and what the general conditions that were related to the mineral exposures were?

A. I did.

Q. As the result of that examination I will ask you to tell the Court what you observed and use your own discretion in the manner of telling it and the way that you go about it. I might state that we will later on prove and identify these. [275] We might as well have these offered as exhibits as later on, and later on identify them and ask them to be accepted.

A. Do you want them marked now before I begin?

(Testimony of Albert Burch.)

Q. I think so, so that we can refer to them. We will take first this surface map which we will label Exhibit 26. Then take the composite map we will label 27 and the map showing the Black Tail and Lone Pine No. 2 levels we will label 28 and the model we will label 29.

A. An examination of both the surface and the underground workings of the territory involved shows immediately two systems of veins, viz., the rather persistent northwest-southeast veins as shown by the Surprise and the Black Tail, and the numerous northeast-southwest veins, as, for instance, the discovery vein of the Lone Pine, the Lone Pine No. 2 vein, and many others which have that general course. There are very few of the northwest-southeast type, very few indeed, but there are at least six rather important veins having the northeast-southwest course, and scores of veinlets. There are not even very many northwest-southeast veinlets. The fractures in the northeast-southwest direction are very much more numerous. [276] It therefore becomes comparatively easy to identify the northwest-southeast veins from the rather distinct exposures while it is difficult to do the same the veinlets of the northeast-southwest system, because they are so numerous. It is not difficult, however, to identify by means of the rather widely separated exposures the really strong veins of that system; and of the strong veins the Lone Pine No. 2 is the largest. Others are the Lone Pine No. 4, a vein which is exposed in the Pearl tunnel that may

(Testimony of Albert Burch.)

or may not be the discovery vein as shown, extending from Station 322 through 323 and dotted across in the vicinity of 325. Then comes the Lone Pine No. 2 vein, which is a strong one and within the Black Tail workings; and on the Black Tail surface is a vein that is exposed between 206 and the crosscuts which adjoin to the east of Station 205. Another one on the surface is between the shafts near 529-C and near 113-C and on to the northeast. These are among the strong veins of the northeast-southwest system. Belonging to that system is the discovery vein of the Lone Pine. That was first opened at the discovery cut upon the summit of the hill, and in that we see two bands of quartz with country rock in between, but the larger and more persistent and important one of the two is at that point about 16 inches in width. Going westerly, it rapidly widens to where we get about 10 and 20 feet west, we have 5 feet of quartz in that vein. It has been followed by trenching continuously to the southwest as shown by [277] the white trench with the red line on top of it extending down the hill to where you see a gap between the two trenches. That is a section where the rock is bare and the vein can be seen in the rock and is painted on the wire below the trenches proper. From that point, with the exception of a very little interruption by a fault where I hold my pointer and where the blue line is shown, a displacement of just a few inches, the vein is continuous down the cut to the westerly side-line of the claim where it is $2\frac{1}{2}$ feet to 3 feet in with.

(Testimony of Albert Burch.)

Going easterly the vein is followed continuously to the cut or near the cut in the vicinity of Station 292-C. There we find it interrupted again by a fault. The same fault is exposed in the underground workings. It crosses the end of the working extending northeasterly from Station 203 in the Lone Pine No. 1 tunnel level and the working upon the No. 4 vein. The No. 4 vein is displaced a distance of something like 3 or 4 feet by that fault. It has a course as I hold my pointer between the two points where I have shown them. It has a dip towards the northeast which carries it up to a position on the surface where there is, I think, the tracing of a vein upon the surface. There the displacement is comparatively small. It cannot be more than 2 or 3 feet, because going down the hill towards the northeast we find the quartz coming into the side of the trench about as I hold my pointer. It goes out on the opposite side near [278] the Station 219-C. From this fault which I have just described down the hill to the easterly side-line of the claim the vein is continuous. The quartz is not continuous. There is a section of about 8 or 10 feet between the two lower cross-trenches and about where I hold my pointer through which there is very little quartz in the vein. The fracture is distinct. You can see the sheering of the rock such as you frequently see along a vein, but there is not much quartz. The quartz is in little stringers and little bunches for that section of about 8 feet. Otherwise, the tracing is absolutely continuous of that

(Testimony of Albert Burch.)

vein from one side-line across to the other and I have not a shadow of a doubt as to its identity as one and the same vein all the way across. It branches. There are some little branches shown on the westerly slope of the hill near the summit where I hold my pointer. These have not been followed continuously but very likely they turn around and reunite, forming horses in the vein. Whether they do or not is immaterial and we did not follow them.

The vein which has yielded all of the ore that is involved in this particular controversy is the No. 2 vein. That is a large one underground. There are places on the surface where it is not so prominent, but still it is a persistent vein, one that you can follow quite readily upon the surface, since it has been exposed by clearing off and of course in places nothing seen, just a vacancy [279] beyond the great red stope that is shown upon this model, Exhibit No. 29, comes up to the surface at 3 points. The vein crosses the easterly side-line of the claim about where I hold my pointer, just southerly from the white raise that has been driven from No. 1 tunnel level upward to the surface. It is readily traceable upon the surface and through those tops of stopes over to the end of the stope and then by means of a trench which goes down quite as much on the dip as it does upon the strike of the vein to a point where it is cut off by a fault. The trench continues to follow that fault down to where there is surface debris so deep that the trenching did not reach rock in place. It will readily be seen that

(Testimony of Albert Burch.)

the upper section of that trench here does not follow more nearly down on the dip of the vein than it does on its strike, as is shown by the projection of my pointer upward from the stopes below. The fault did not result in a very material displacement of the vein. The horizontal displacement is slight, and in fact throughout the entire length of the fault between the two ends you find more or less drag quartz of the vein. The vein quartz is evident in fragments all along the trench at which I hold my pointer—no station numbered but the lower end of the trench above No. 2.

Q. At Station 558 is it not?

A. Yes, Station 558. There we lost sight of both the fault and the vein upon the surface. The vein is picked up again in the trench which terminates near Station 200-C, though 200-C, I think, is a surface station [280] and the vein is exposed in the cuts from that point on southwesterly, cuts at 576, 575 and 574 and on down to the side of the railroad excavation. The railroad track runs along this shaft where I hold my hand and the vein is exposed down to the side of this excavation. There, standing up plainly in the side of the railroad cut is the plane of the fault against which the vein terminates, so far as you can see. At that point again an attempt has been made to pick it up beyond that though I think the displacement is probably very slight indeed. That vein there also crosses both the east and the west side-lines of the Lone Pine claim which is shown by the white lines upon the model, Exhibit No. 29.

(Testimony of Albert Burch.)

Underground, on the 200-foot level we find the vein continues to the northeast from the vicinity of Station 326 and between Station 326 and Station 64-C we see on this level the downward continuation of the same fault that shows upon the surface. It is a fault which for a short distance conforms to the footwall of the vein and then departs from it, cuts across diagonally and continues out under the wash in a nearly southerly direction. The fault has nearly a north and south strike but between Stations 330 and 331 on the 200-foot level we begin to find the vein again on the under side of the fault, coming in to the side of the drift; and the horizontal displacement is not to exceed 25 or 30 feet. In fact, we find a portion of the vein in the little crosscut [281] going northeast from Station 65-C, also underneath the fill. Continuing southwesterly, the vein is followed by the workings running out from Station 331 southwesterly to its face where it is—oh, 5 or 6 feet wide—quartz in the face of the opening. There is a gap through which it has not been traced under the surface debris amounting to about 65 feet and I might say in connection with that that when I first visited the property it was plainly evident that these two would connect and my first effort was to endeavor to obtain permission to make that connection. We finally succeeded in getting it, but two weeks time was lost. If we had had that additional 2 weeks we could unquestionably have connected that vein right across underneath that debris.

Now, I have prepared a little model which I will

(Testimony of Albert Burch.)

refer to in a minute. We will take up, however, before using that the Black Tail vein. The Black Tail vein is a good vein and upon it there has been a considerable stoping in the Black Tail ground as shown by the yellow stopes toward the southeasterly end of the model. And I might say that the color scheme used upon this model and upon the other exhibits, is this: Northeast-southwest veins and veinlets are shown in red; northwest-southeast vein systems in yellow; and faults of all sorts in blue. The yellow vein shown in the Black Tail workings upon the Black Tail tunnel level, as you will observe, has a very straight course, unusually straight. Most veins are crooked; but it has an unusually straight course from [282] the point where it is interrupted by a fault, where I hold my pointer to the most northwesterly exposure upon that level. It has been picked up beyond that fault which has a displacement of about 50 feet and found again going in a southeasterly direction. What I believe to be the same vein is seen in a raise which is above what is called the gulch winze on the other exhibits, but I am not certain whether that is the same vein or not because of the faulting that intervenes, the throw of which I do not know. It is reasonably certain that the exposure in the end-line cut and the end-line tunnel is not an outcrop of the Black Tail vein at all. Your Honor will see that it has this straight course and a dip as I hold my pointer. Carrying out that towards the end-line to the Apex would gradually curve round to the east and cross the end-line at a point considerably

(Testimony of Albert Burch.)

further east than the end-line cuts. In fact, the end-line cut does not show anything that looks good enough to me for the Black Tail vein. The Black Tail vein is a good vein and yet in the trench northerly from the end-line cut we have what appears to be probably the Black Tail vein again and intervening we have the fault which is shown in blue upon the Exhibit No. 29 and which is also shown on some of the exhibits of the plaintiff. The same fault appears on No. 2 tunnel level as shown upon Exhibit 29 and is also shown upon some of the exhibits of the plaintiff. It is possible that that intervenes [283] between the segment of the Black Tail as developed in the Black Tail ground and the segment which is probably Black Tail vein on top of the gulch winze. Now, then, it is my opinion that the Black Tail vein crosses not only the No. 2 but crosses practically all of these other northeast-southwest veins. The No. 2 vein also crosses the Black Tail. Originally the situation, as I conceive it was about as shown by this model. [284]

Mr. COLBY.—Let us have that marked.

(Model marked Defendant's Exhibit 30 admitted in evidence and made a part hereof.)

A. Using the same color system and orienting the model so that you are now facing north, and looking in that direction, you have the red, northeast-southwest No. 2 vein crossing the northwest-southeast Black Tail vein. That was the situation, as I conceive it, before the breaking along the fault which I have described as being in the end of the trench near Station 558. The result of the faulting movement,

(Testimony of Albert Burch.)

which was a perverse fault or thrust fault, was,—I might also show you the veins as they dip, the red vein being the No. 2 and the yellow vein being the Black Tail with their proper dips—the cutting of this has been done upon straight lines. Neither of the veins nor the fault is straight. We used a saw and it was almost impossible to cut the curves as we could otherwise have done. Cutting across both veins, therefore, is the fault which is shown in blue and the thrust fault upward, throwing the vein upward, the block of ground upward, brought the ground up until the veins *we* in a position as I saw it now. Now, conceiving that we have taken off the surface of the ground down to the 200-foot level, we have then the veins as shown in the workings upon that level, or as near to it as you can get to it with straight line saw cuts.

Q. That is as they exist to-day?

A. That is as they exist to-day.

Mr. GRAY.—Before you leave this surface, here is the No. 2 level. [285]

A. This is the No. 2 level, yes. Those are the workings of the No. 2 level with the exception of this extension of the drift southerly from 331 which had been made since the model was made. The same thing will appear—you will observe by looking at the model Exhibit No. 30 and the map Exhibit No. 22, that the same workings with the exception of this little extension southerly from 331 are shown upon the plane of the model and upon the map with the veins in the position which they

(Testimony of Albert Burch.)

occupy to-day in that ground. Now, with reference to the extension of the Black Tail, northwesterly from the Lone Pine No. 2, we have a winze which is not shown upon this model Exhibit No. 28, in the position where I hold pointer at Station 64 or 64-C. The winze is sunk upon a vein which dips about as the Black Tail vein does southeasterly and has about the same strike. That winze is shown upon the model Exhibit No. 29, where I hold my pointer near Station 64-C. What I believe to be the same vein is disclosed in the Pearl tunnel near Station 92-C, where about 4 or 5 feet of quartz is found overlying a gouge. And by the way, it is rather characteristic of these northwest-southeast veins that there has been movement upon them resulting in the formation of a gouge, while the veins on the northwest-southeast system of veins are generally tight, the walls are tight, and there has been practically no movement upon them. That also helps to identify veins upon opposite sides of a fault, with reference to those of the northwest-southeast system. Going downward into the mine, this same fault is readily identifiable upon three lower levels. It is seen on the No. 3 level at the last crosscut to the right going southwesterly. It is seen on the No. 4 [286] Level at the mouth of the crosscut leading over to the Surprise shafts. And by the way, on that level, some of the vein under the faults is also picked up beyond the faults, a little of it, but the working is turned and leaves it because the strike of the vein is more nearly west

(Testimony of Albert Burch.)

than the direction of the working. The same fault is seen again, down at the southwesterly end of the No. 6 level. It is a persistent feature readily identifiable, and the direction and extent of the movement results in bringing veins which originally were crossing each other into the position which we find them to-day in the ground. With the exception of that interruption, therefore, by faulting, along which there is more or less drag quartz, we have a No. 2 vein traced from one side-line of the Lone Pine claim to the other side upon the surface. I cannot conceive of any other reasonable explanation of the phenomena which we see in this ground. It is possible that veins do turn at substantially right angles and persist for long distances upon portions at right angles to each other. That is all possible. Almost anything is possible in nature. But in my experience, I have never seen an occurrence of that kind in a homogeneous rock, with the possible exception of the vein in the Gold Field Consolidated and there the reason was very apparent. The vein was straight in its course for a long distance down from the surface. At a considerable depth it became, instead of a fissure vein within a homogeneous rock, a contact vein between local light igneous rock and the underlying shale. It conforms to that contact. The contact was crooked. It was the way the lava flowed out over an uneven [287] surface and when it reached the point where it conformed in position to that contact, then it made many spurious gyrations and incidentally became a worthless vein.

(Testimony of Albert Burch.)

I am somewhat familiar with the veins in the Pennsylvania and Empire and North Star in the Grass Valley camp which have been referred to, and it is true that those veins make bends to the extent of around 60 degrees. But to the best of my recollection, though I have not been in either of those mines for six or seven years, those changes of course, do not persist very far. On the dip, I would say that the greatest distance is perhaps sixty feet, and then you get the persistent direction of the vein beyond. On strike it might be considerably more because of the encountering of the planes at a different angle. But those are veins several thousand feet in length, and the general direction is maintained throughout the entire length with those saw tooth changes in course.

Now, with reference to the bending of the No. 2 vein, in the southerly or southwesterly end of the stope, there is a slight bending there, and there is also a slight bending undoubtedly in the vein beyond the fault, over in the section where it is exposed by the cuts, and between the last cut and the workings on the No. 2 level. That is what you would expect in connection with a fault movement. I will draw a sketch to show what usually occurs. Assuming the blue line to represent a fault, and assume that that cuts through a vein and displaces it, even on the opposite side of the fault, and the bend to have a curve about as I show it here, assuming that the direction of the movement is as I have drawn the [288] black line, that is what we actually see in

(Testimony of Albert Burch.)

the ground at the southwesterly end of the stope upon the No. 2 level of the Lone Pine.

Mr. COLBY.—Let us mark that as an exhibit.

(Diagram marked Defendant's Exhibit 31 admitted in evidence and made a part hereof.)

A. I believe I have answered your question, Mr. Colby.

Q. Mr. Burch, you have had considerable experience with discovery veins, have you not, in your various examinations? A. Yes, I have.

Q. How does this discovery vein that passes through the discovery cut compare in magnitude and appearance and size with many of the discovery veins which you have encountered in your examinations?

A. I would say it was quite up to the average, but not above.

Q. I would like to call your attention to the No. 4 vein. I do not believe you described that, did you, in any detail? A. Not in detail; no.

Q. I do not care to have you go into any considerable detail, but just state generally what conditions you found in connection with this No. 4 vein.

A. The No. 4 vein exists as a plain vein ranging from perhaps 2 feet up to as much as four or five feet in width underground where it is exposed on the No. 1 Tunnel Level, and on the Pearl tunnel level and in the stopes between. [289] There has been a small amount of stoping upon the vein, indicating that ore of a commercial grade had been

(Testimony of Albert Burch.)

taken from it. It belongs to the northeast southwest system.

The COURT.—That is as far as the vein has been followed, is it?

A. That is as far as it has been followed. I think that we have an exposure of the same vein on the surface in the cuts at the extreme north end of this model. One of the cuts, by the way, which was made very recently, does not appear upon the model. It is about 30 or 40 feet southwest of the southernmost one, and the vein appears in that. I think that that is probably the same vein, though it may not be. It is displaced where I hold my pointer, by the same fault that displaces this discovery vein, which has a dip in the direction that I hold my pointer, and if that were a thrust fault, then the No. 4 vein would be brought up to the surface into the position where a vein is exposed.

The COURT.—Nothing but surface work has been done on the discovery vein?

A. There is nothing but surface work done on anything that we are sure is the discovery vein. There is a drift driven from the No. 1 tunnel level, near Station 314, fifty feet southwesterly and about 40 feet northeasterly that may be upon the same vein. Also in the Pearl Tunnel we have a working for a short distance each way from the remaining tunnel and an exposure where I hold my pointer there. But whether it is or not I would not be able to say without connecting through, because there are a good many branches to that vein upon the

(Testimony of Albert Burch.)

surface. It is in a region where there [290] are a number of small veins. You can readily see, your Honor, as is shown upon the No. 1 tunnel level, that veinlets consisting of quartz to the number of 15 or 20 are crossed by that working, and to be positive that one or the other of these is the same as the discovery vein, would be impossible.

Q. Do you find many cross-veins crossing this parallel system that you have described, crossing them in a northwesterly direction?

A. Very few. There are only two that I would dignify by the name of vein, that I know of. One is the Black Tail, and the other is the Surprise. And even of the little veinlets there are very few indeed.

Cross-examination.

(By Mr. GRAY.)

Q. Won't you hold your pointer on that fault that you spoke of as faulting this so-called discovery vein on its way to the east side-line?

A. (Witness indicates same.) Here is the one exposure right there, and the other exposure right at the end of that drift.

Q. Hold your pointer the way you have it, also another pointer down on the dip of it.

A. (Witness does as requested.)

Q. How large a fault is that, Mr. Burch?

A. It is a heavy gouge.

Q. How wide?

A. It is a gouge, I would say, ranging from 2 inches [291] up to 5 or 6 inches in width.

(Testimony of Albert Burch.)

Enough so as to produce caving in above on these drifts.

Q. What is its size where you say it faults the so-called discovery vein at the surface?

A. I don't know. I cannot identify it on the surface there at all, because you cannot see a gouge. A gouge is the first thing that would be washed away.

Q. Where is that vein faulted at the surface?

A. It is faulted from the point where it leaves the trench about station—

Q. Let us get over to the map. Show his Honor where you are showing that fault.

A. The fault is not shown here, but the dislocation is shown, the little trench where I hold my pointer now.

Q. North of Station 582?

A. Yes, the second trench up the hill from the trench on the side-line.

Q. But you did not find the fault there?

A. I could not find the gouge.

Q. I asked you, you did not find the fault there?

A. Yes, I find the evidence of a fault.

Q. Do you find the vein on the two sides of the fault? A. Yes.

Q. And what is the evidence of the fault other than the fact that you have two stringers, one on the east and one on the west?

A. The evidence is this, that you find those in addition to that part of a fault underground which, projected [292] up, arrived at that point.

(Testimony of Albert Burch.)

Q. As a matter of fact, between those two, you crosscut in country rock, didn't you A. Yes, sir.

Q. How far up did you project it?

A. To that point (indicating).

Q. How far up in hundreds of feet?

A. About 150 feet.

Q. Through undeveloped territory?

A. Yes, sir.

Q. Is it developed at that point 150 feet from where you projected it? A. It is not.

Q. How many hundred feet is it to the nearest exposure in this projection?

A. In a horizontal direction, about 280 feet.

Q. So this little 2-inch to 5-inch seam of gouge, in order to fit this theory, you have projected 280 feet horizontally and 150 feet vertically, to get it up to fault this little vein? A. That is correct.

Q. All of these faults that you speak of are post mineral? A. I don't know.

Q. What is your judgment?

A. My judgment is that most of them are. I think all of them are as far as that is concerned. There aren't very many faults.

Q. The one you have pictured to us, on Exhibit 30, [293] the one which you say is so persistent, is that a post mineral fault?

A. Yes, I think unquestionably it is. It displaces that vein.

Q. By that you mean, Mr. Birch, that it is later than the mineralization? A. Yes.

Q. And is unaccompanied by mineralization?

(Testimony of Albert Burch.)

A. Yes.

Q. Now, you say that is a thrust fault, and you have undertaken to show in this model the displacement of it? What is its displacement?

A. About 120 feet.

Q. In what direction?

A. Upward and to the south.

Q. Where did you measure it?

A. Where did I measure it?

Q. Yes, sir. How did you get the measurement?

[294]

A. I measured it along the slope of the fault.

Q. You measured it along the slope of the fault?

A. Yes, sir.

Q. Between what levels?

A. Between the 200 level and the point which would bring the veins back into a position in line with their known positions on each side below.

Q. Assuming that your theory is correct?

A. Assuming that my theory is correct, yes, the only theory that seems to fit.

Q. The only theory that seems to fit?

A. Yes, sir; to fit the facts.

Q. Of the two, possibly it is more possible. Now, Mr. Burch, you have carefully of course gone over the surface and undertaken—by the way, are you responsible for the coloring upon the exhibits?

A. I have checked a great deal of it.

Q. You have checked it enough so that you are satisfied to testify it is substantially correct?

A. I think it is.

(Testimony of Albert Burch.)

Q. It represents your views of that geology?

A. Yes, sir; I think so.

Q. So also does your model?

A. I think so. There may be some little errors in places that I have not detected, but I think it is correct.

Q. Do you see that fault that you speak of in the trench from Station 558 northerly? A. Yes, sir.

Q. You see it there? [295]

A. Yes, sir; I see it plainly.

Q. Just describe it so his Honor will be able to identify it if he accepts our invitation to go and see it.

A. It is evidenced there by fine laminations of the rock, sheeting, parallel fault movement, and of course there is not any gouge there. The gouge is gone there at the surface, but that is what you see there, and it is only just a few feet, it is not more than twenty-five or thirty feet down to where you can see the gouge below on the No. 2 tunnel level.

Q. I am speaking now of the trench, let us stick to one thing at a time.

A. Yes, sir; that is what you see, some dark quartz.

Q. Some dark quartz? A. Yes, sir.

Q. Isn't it true that you see that banding of continuous quartz from the northerly end of that trench clear down to the southerly?

A. It is not, except on the edge of the quartz where there has been a little sloughing off, you

(Testimony of Albert Burch.)

can see along the strike of it, going down on the dip.

Q. So that there, Mr. Burch, we are at a point of disagreement in observation between the witnesses on the two sides? A. I do not know.

Q. As a matter of fact, you were unable to trace continuous quartz through that trench down to its southerly end?

A. Yes, sir, I could not; not unbroken. [296]

The COURT.—That is the point right north of the gulch.

Mr. GRAY.—Yes, sir; it is the point which I want to identify for your Honor on our map. It is this trench here in which we show continuous quartz.

A. It is the same one, your Honor, shown in white on Exhibit No. 29, with the blue line down it.

Q. Mr. Burch, you did find quartz in the trench which has no number upon that map. Let me get the number. It has no number on ours. It is marked G'.

A. Well, I will put a number on, Mr. Gray.

Q. All right. Mark it G'. You find quartz in the trench G'? A. I do.

Q. You find a vein there? A. Yes, sir.

Q. What vein is it?

A. I think it is the Black Tail vein, but I am not sure.

Q. I want to mark the point G also upon there. At the northern end of the open stope will you mark that point G?

(Testimony of Albert Burch.)

A. Northern end of which open stope?

Q. Of this one just north of 554. Now, Mr. Burch, you have expressed the opinion that the Black Tail vein crosses the so-called Lone Pine No. 2 vein and is found at some places beyond?

A. I think it does.

Q. I understood you to say in your judgment it was not a very strong vein?

A. No, I did not say that. I said it is a strong vein. [297]

Q. It is weak in comparison to the Pearl vein.

A. It is rather weaker than the Surprise vein, yes, or Pearl, but it is still a good strong vein.

Q. At point 63-C, what is the size of the vein?

A. Oh, there is probably four feet there, maybe six, I can tell by looking at my notes.

Q. It is a substantial vein in any event?

A. It is.

Q. I understood you to say that in the trench along the end-line, the south end-line of the Lone Pine, the vein was of very little consequence, you don't regard it of any importance?

A. There is not any vein there that strikes in the direction of the Black Tail so far as I could tell.

Q. How many stringers of quartz did you count in there—any?

A. You are referring to the trench or to the end-line tunnel, which one?

Q. The end-line trench.

A. In the end-line trench I saw two, one of perhaps 8 or 10 inches, and the other one perhaps 3

(Testimony of Albert Burch.)

inches, but I do not think that either one of them was in place—a boulder.

Q. You did not see anything in place there?

A. Not in that trench—oh, yes, I did. Up above the pit that is sunk in the trench, that is to say, easterly of 61-C, the bedrock is exposed for a long distance.

Q. And through the cut from 108-C northerly to 4-C you have it marked in yellow upon your surface map. That represents what you believe to be the Lone Pine vein? [298]

A. The Lone Pine vein?

Q. I mean the Black Tail vein.

A. I think that is probably the Black Tail vein.

Q. Mr. Burch, you then are of the opinion that this Black Tail vein is found northerly at least to the trench G-1?

A. I think it is found in the trench G-1; yes, sir.

Q. And northerly?

A. Yes, sir; and much further.

Q. You do concede that the so-called Lone Pine No. 2 vein is found at least as far southerly as the trench north of Station 551?

A. Yes, sir; and a good deal farther southwest-erly

Q. If you will just answer my questions. So that you have them there how far apart?

A. About 40 feet.

Q. About 40 feet? A. Yes, sir.

Q. Is the red that you show on the easterly side of the trench north of 558, a part of the Lone Pine No. 2 vein?

(Testimony of Albert Burch.)

A. Yes, sir; going downward on its dip, as you can readily see here. It goes partly down on its dip and partly on its strike.

Q. Whether it goes on its dip or its strike, you can see that this is part of the Lone Pine No. 2 vein? A. Yes, sir; that is correct.

Q. Yes, sir; from the southerly end of trench 558, I see you have some yellow, what is that?

A. That is a northwest vein. [299]

Q. Is it the same vein shown in Trench G-1?

A. I think so.

Q. How far is that from where you have found the quartz of the so-called Lone Pine No. 2 vein?

A. About 20 feet.

Q. What is the scale of this?

A. Forty feet to the inch.

Q. Won't you come over to this larger scale map? This working 331 was driven at your suggestion, wasn't it? A. It was.

Q. That is, this working here? A. It was.

Q. Your geology is where, upon the floor, breast or roof of the workings?

A. It is about midway up, half way between the roof and the floor.

Q. Mr. Burch, is it a fact that in that working, south of Station 331, quartz is found as shown upon Plaintiff's Exhibit No. 4? A. It is not.

Q. It is not? A. No.

Q. So, here again it is a matter of observation. You were unable to find those bands of quartz which are shown upon that exhibit?

(Testimony of Albert Burch.)

A. Not in that direction; no, sir.

Q. What direction have the bands of quartz which you found in that working?

A. A generally— [300]

Q. Let us have your notes.

A. I have no notes on it.

Q. You have no notes on it?

A. No, I have no notes on the direction of any bands of quartz.

Q. All right, let me see your notes on that working.

A. (Witness produces notes.)

Q. Where is that working?

A. That is the working.

Q. What does the red that you show represent right in the end of the working in the southeastern corner?

A. It says: "Vein in winze 6 feet below shaft, strikes north 20 degrees west, dips 45 degrees east."

Q. That is this one?

A. That is a sand winze; yes, sir.

Q. Isn't it true that in the back of that drift at the point shown in the little drift south of 331½ you find that that quartz in the left-hand side in the roof of the drift?

A. No, you cannot find anything in there, but surface quartz and debris in the roots.

Q. I want to mark it as the point B. I will mark it, the workings from 331½ to B, you say that the quartz cannot be found?

A. No, not on the left-hand side. All you can

(Testimony of Albert Burch.)

find there is surface wash.

Q. That is open to inspection?

A. All you can see is lagging now. I have to drive lagging to hold the dirt up. [301]

Q. Have you a map which you exhibited to me in San Francisco a couple of weeks ago?

A. Not in court here. I can get it for you if you wish.

Q. It was your opinion at that time, before this working was driven, that this vein passed on out in a much more nearly westerly direction, wasn't it?

A. No, it was not. It was my opinion that the vein continued substantially as it was up here on the under side of the fault, and substantially the same direction, and just why that work was turned deliberately to leave the vein, I never could understand.

Q. Does not the ten-foot detailed sketch, Plaintiff's Exhibit 4, show accurately the banding of the quartz and the position of the quartz and the position of this fault from Station 326 to Station 331½?

A. I do not think accurately, no, because in the first place, the fault, I don't think departs at 331½ at all. I think it continues until you cannot see anything but surface debris where I hold my pencil; in other words, all of the quartz that is exposed in a working from 331½ southerly is on the west side of a fault?

Q. But you did not find the quartz there?

A. I found the quartz all the way along the side,

(Testimony of Albert Burch.)

that is, the right-hand side; in fact, the working had to be turned around to get the quartz at the face, turned to the right.

Q. You did not take the course, though, of those bands of quartz? [302]

A. No, the quartz is all broken; you could not get any reliable course on the bands.

Q. You could not get it?

A. No, you could not, because the quartz is all broken and shattered. It would not mean anything, any course taken on the bands of shattered quartz.

Q. Mr. Burch, at the present time, isn't it true, that those bands of quartz, assuming that this is the face of the working south of 331½, that the bands of quartz are shown in the back as I have them sketched upon Exhibit No. 31?

A. I think that is about correct. They are on the right-hand side and not on the left-hand side as you face the opening.

Q. If they are projected to the floor, they are on the right-hand side of the drift at the floor, aren't they?

A. They would be, yes. That, however, Mr. Gray, is facing—

Q. North.

A. That is the way you look as I hold my pencil now, not facing as you look that way, but facing as I hold my pencil, which would give the strike of those bands of quartz as I hold my pencil now towards the southwest.

(Testimony of Albert Burch.)

Q. You say those bands of quartz have a strike southwesterly?

A. Yes, sir, I think so. They are very much broken and a man is foolish in saying that a broken band of quartz represents its original position, but that is the way they [303] strike.

Mr. COLBY.—Which way are you standing when you are looking at this?

A. You are standing and looking southwest.

The COURT.—At this time we will take an adjournment until 2 o'clock.

Thereupon an adjournment was taken until 2 o'clock P. M. this day, August 25, 1920. [304]

2 o'clock P. M., Wednesday, August 25, 1920.

Court convened pursuant to adjournment, present as before.

ALBERT BURCH resumed the stand for further *cross*

Cross-examination.

(By Mr. GRAY.)

Q. Mr. Burch, on your model 30, do you correctly show this red vein to the southwest?

A. Oh, practically so as near as you can get it with straight lines. You see the saw cut goes through on a straight line, and the vein isn't straight.

Q. Does it go out at Section 331 as you show it?

A. Out of that working?

Q. Out of that working, yes.

A. Yes, out of the old working that existed there at the time.

(Testimony of Albert Burch.)

Q. You haven't put on the short working which we call 331½?

A. No. In fact, the vein curves more around to the left.

Q. Suppose you put a red line on there to show where it ought to be. By the way, did you bring that map that we were talking about? A. Yes.

Q. As a matter of fact, your map will show it?

A. I didn't put anything on the map. The map was one that was supplied to me. That is about the same, I think, as it was developed.

Q. Down to the point B, just put B there if that is the point. [305]

A. That is my recollection of it.

Q. Do you correctly show the fault on its course northerly, as nearly as you can with a straight line?

A. As nearly as you can with a straight line.

Q. Well, does it run in a straight line?

A. No, it does not. There are two branches, one branch that follows substantially the footwall of the vein and the other branch goes out across here.

Q. Across this working which extends northeasterly from 65-C? A. Yes.

Q. Approximately as shown on the model?

A. Yes.

Q. I want you to come over to the map. Will you get that branch that you say turns to the east on the 200 level?

A. The branch that turns to the east?

Q. Yes. What is this—in other words, what is this blue that you have marked following the foot-

(Testimony of Albert Burch.)

wall of the vein and which is found northerly of Station 326? A. That is that branch.

Q. How far does it follow the footwall of the vein?

A. About as far as is shown there, as near as I can tell. That has all been excavated, the ground is all cut out, but you can see the wall there where it formerly existed, I think.

Q. Didn't you follow it as a matter of fact, clear up your past Station 203?

A. I didn't succeed in doing so.

Q. Have you your notes on that? Don't they show that? [306]

A. I don't think so. I thought I identified the same thing a good deal farther north. Up at the point here I think probably we have the same thing there.

Q. That is at the crosscut 202? A. 202; yes.

Q. Just run up past along the footwall of the vein and past the 103, wouldn't it?

A. Yes, sir; that is the way I have it.

Q. That is the way you have it on your notes?

A. Yes.

Q. That is that fault with 120-foot throw that you were talking about? A. That is a branch of it.

Q. You wouldn't object—you think that it extends along the footwall of the vein up past Station 103? A. I think so.

Q. On the 400 level, that is this one here, you find it on the footwall of the vein much farther up than you have shown it on your map, don't you?

(Testimony of Albert Burch.)

A. Not on the level. I can't tell much about it down on the level, but I climbed up in the stope and in the stope I thought I could see it on the footwall of the vein at a point about 30 feet northeasterly from where it was shown striking the footwall on the level; in other words, up about here.

Q. Didn't you find it clear up past Station 170-A?

A. I did not.

Q. Did you look for it there? [307]

A. Yes, I looked at that point.

Q. Your notes don't show that there?

A. No, my notes don't show it on the level, beyond where it is shown there.

Q. Where does it cross the No. 1 Crosscut tunnel?

A. I am unable to say.

Q. Well, this vein—this fault with over 100-foot throw, you can't find in that crosscut?

A. I can't tell where it is. This branch turning off to the left, which I consider the same one—

Q. I am talking about the one that turns off here and follows the footwall of the vein.

A. Which I don't consider the same one.

Q. I don't care what you consider it. You are not able to find it in No. 1 tunnel. A. I think not.

Q. No. 1 crosscut.

A. I don't know where it is there.

Q. You say you have not been able to find it?

A. I haven't looked for it.

Q. You didn't look for it? A. No.

Q. Of course, I don't suppose you correlate that

(Testimony of Albert Burch.)

with the little fault that we were talking about this morning, Mr. Burch?

A. Oh, no; that has a different strike and a different dip.

Q. Now, then, with reference to the fault in—where does that fault go southerly from the face of the 331½ working? [308]

A. I can't tell you. It disappears underneath the wash there, and what course and strike it takes from there, I do not know.

Q. Where do you find it in the workings from the incline on the Surprise vein?

A. It is possible that this may be it near Station 205. I don't know; didn't see the working in the Surprise vein; I wasn't there at all.

Q. I say from the Surprise vein incline.

A. Yes, on the No. 4 level.

Q. On the No. 4 level?

A. It shows on the No. 4 level where I hold my pencil here near Station 81-C.

Q. What branch is **that**?

A. That is the main one.

Q. That isn't the one that turns and branches.

A. A branch of it turns off and follows the foot-wall.

Q. Where does the other branch go?

A. Presumably it keeps on as it does on the level above.

Q. And the No. 3 level shows up the 2 branches?

A. Only one branch exposed there.

Q. Which one is it?

(Testimony of Albert Burch.)

A. That is the main fault.

Q. That is the one you said followed around, isn't it? A. Oh, no; not on number 3.

Q. Aren't you able to follow through on No. 3 past Station 109? A. No, sir. [309]

Q. Is there a gouge there? A. No, sir.

Q. There is not? A. No, sir.

Q. You are sure of that, are you?

A. Yes, sir. [310]

Q. Now, I would like to take you to the 10-foot detail map, this main branch of this fault with a throw of more than 100 feet. Where is it on that level of those workings?

A. It is not shown here. We find the main part of it in the crosscut—near the face of the crosscut easterly from station 320-A.

Q. That is near the face?

A. Near the face, yes, and it crosses near Station 326. It crosses the bending in a different direction from the gouge which is shown upon Exhibit No. 4.

Q. Do you find a gouge crossing the working from 326 to 320-B at the points shown on Exhibit 4?

A. Yes, but not in the direction.

Q. What is the course of that gouge according to your own notes, if you will just lay those before his Honor. I think this is very important and I want to direct your attention to this particular place.

A. The notes show for themselves.

Q. Now, Mr. Burch, don't you find a gouge near the west wall, west of Station 326, passing in a southwesterly direction and crossing the crosscut from 320-A? A. No.

(Testimony of Albert Burch.)

Q. There is none such there that you observed?

A. No.

Q. The only one that you observed is the one which—you call it the one which I will mark on Exhibit 4 as “B” with a blue “B” with the gouge which I have marked with a blue “B’,” and a little crosscut east of 320-A? [311]

A. Yes, it is pointed right straight off.

Q. What is the strike of the one at B?

A. Substantially south.

Q. What is the strike of the one at B’?

A. Substantially north.

Q. You did not find one at the point C?

A. No, nothing of any importance.

Q. No gouge at all across that?

A. I would not say that there is no gouge at all. There may be a little break in there.

Q. What is the course of the gouge northeasterly from B’ to Station 327?

A. Substantially as shown upon Exhibit No. 4.

Q. Does it bend out about the point B and run southerly?

A. No, it bends out about Station 326.

Q. Do you find any gouge crossing the crosscut on the—what crosscut is that?

A. The main No. 2 tunnel.

Q. The main No. 2 crosscut as shown on Plaintiff’s Exhibit No. 4? A. I do not.

Q. Now, Mr. Burch, do you find the gouge passing southeasterly through Station 320? A. I do.

Q. Do you find that any place further to the south-

(Testimony of Albert Burch.)

east? [312] A. I do not.

Q. Is that a postmineral gouge?

A. I think it is.

Q. A branch of this 100-foot fault?

A. I don't think so. I think it is the gouge following the footwall of the Black Tail vein. You will find practically everywhere through the Black Tail vein, through that gouge. I think it is a post-mineral gouge. I think it is a movement along the footwall of the Black vein. Then the main fault is later than that and naturally would displace it. You would not see the continuation of it further to the south.

Q. In other words, you think that postmineral gouge is faulted by the 100-foot fault?

A. Yes.

Q. So that we have two ages of postmineral faulting? A. Yes.

Q. Did you observe that anywhere else?

A. That faulting along the Black Tail?

Q. No, from the faulting of this northwest fault by the northeast fault.

A. Yes, I can show you that.

Q. Whereabouts?

A. Those faults run northerly and southerly. [313] (Witness having moved over to defendant's map.) In the southeastern part of the workings upon the Black Tail vein within the Black Tail claim, the fault which follows the footwall of the Black Tail is cut off by a fault having a northeasterly strike and is displaced a distance of about 50

(Testimony of Albert Burch.)

feet to the southwest—60 feet.

Q. You think this fault away down there is the same big 100-foot fault that you have been speaking about up on the Pine claim? A. No.

Q. I asked you if you knew any place where this 600-foot fault faulted this earlier fault which you say is along the Black Tail footwall?

A. I did not understand you.

Q. I asked you if you could point to some place where one fault faults the other.

A. That is the only place where it would be possible to see it that I know of.

Q. Does this map Exhibit 38, just west of Station 336, correctly show the position of the ore and this fault that you speak of?

A. Very closely, I think.

Q. Now, that fault is the main fault, having the throw of 120 feet, the one which you have pictured on this exhibit, is it?

A. Yes, sir; I believe it is, it branches just west of 336 here.

Q. Which is the main branch?

A. The main fault continues on northerly in its general [314] direction. The other followed for a short distance the footwall of the vein, that footwall being there first.

Q. The footwall being there first?

A. The footwall was there first and the fault afterwards.

Q. It crosses the Lone Pine No. 2 tunnel. How wide is it as it passes that Lone Pine No. 2 tunnel?

(Testimony of Albert Burch.)

A. Two or three inches of gouge.

Q. Two or three inches of gouge, and you think that is a 100-foot fault?

A. I think so; yes, sir.

Q. What is the movement of that fault, what is the horizontal movement?

A. The horizontal movement is very slight, probably not more than 120 feet.

Q. And the vertical movement?

A. About 120 feet, on the dip of the fault.

Q. There is not any place in the property where you can actually show that displacement, is there? That is the result purely of the application of your theory with reference to it?

A. No, that amount of throw brings 2 veins back into the position that they originally occupied.

Q. That is assuming that this, which is found in the trenches and near the southwest corner of the fault in the Lone Pine No. 2 vein is identical, or was identical. A. Yes, sir.

Q. Now, the hillside going southwesterly from those trenches is well exposed, isn't it?

A. Going southwesterly below those trenches?

Q. Yes, sir. [315]

A. No, there is a lot of surface wash. You are almost at the edge of the gulch when you get down to the railroad track, and when you cross the railroad track, which runs about where I am passing my finger now, when you get beyond that, then you are under wash, debris.

Q. Mr. Burch, does this fault that you speak of

(Testimony of Albert Burch.)

fault the Pearl-Surprise vein at any place?

A. I doubt it, sir. I doubt very much whether it does or not.

Q. What becomes of it?

A. I think it moves up on the Pearl and Surprise vein, there is very heavy gouge along the Pearl and Surprise throughout that section.

Q. It moves up on it. A. Yes, sir.

Q. In other words, it faults in your judgment, the Lone Pine and the Black Tail and then runs over to the Surprise and runs along the Surprise.

A. Yes, sir; in other words, that block of ground in there has moved.

Q. Your conclusion is based solely upon the fact that you could not find where it faulted the Pearl-Surprise vein, isn't it? A. No.

Q. Well, what else?

A. The heavy gouge along the Pearl and Surprise vein on the hanging wall side of it.

Q. That heavy gouge on the Pearl-Surprise vein continues far north of there, doesn't it? [316]

A. Yes, sir; but not so heavy.

Q. Where does that begin to get so heavy—in other words, north and south along the Pearl-Surprise vein you find this heavy gouge?

A. You find the gouge on the footwall side, and in certain sections you find it on the hanging-wall side also. You find sometimes three gouges, one on the hanging, one on the foot and one on the middle. The vein is accompanied by gouge throughout the entire extent.

(Testimony of Albert Burch.)

Q. Now, I want any reason that you can give other than that you cannot find that vein faulted while this 100-foot fault goes over and moves along the Surprise vein.

A. That is the best reason that I can think of.

Q. Does it fault the Surprise vein by 100 feet?

A. I don't think so.

Q. Did you move it at all, just went off and played out along the course of this vein, did it?

A. Followed it.

Q. Followed it? A. Yes, sir.

Q. The movement that took place up in the Pine, did not that take place down in the Surprise vein, too?

A. Along the hanging-wall side of it, yes, sir.

Q. You find evidences of a 100-foot movement there?

A. There is evidence that would indicate as much as 100 feet or more.

Q. What is that evidence—just the gouge?

A. The extent of the gouge; yes, sir.

Q. You have it or one of its branches, in fact, you [317] have it running along what you call the Pearl-Surprise vein for some distance on the footwall, haven't you? A. Yes, sir.

Q. Then you have it following along the Surprise-Pearl vein, haven't you?

A. What was the first part of this question?

Q. It follows in part the footwall of what you call the Lone Pine No. 2 vein?

(Testimony of Albert Burch.)

A. Yes, sir; that is right, for a short distance, just a spur.

Q. You found it in one place running up two or three hundred feet, didn't you? A. No.

Q. Go back and see now; how far did you see it?

A. I found it at Station 103, and I think that is probably the same crack at that point where you hold your finger.

Q. West of this point, how far did you find it out on the No. 2 level, following the footwall of what you call the Lone Pine?

A. I think that is about 150 feet. I will scale it.

Q. I think that is good enough. Then you find it later in your judgment following down southerly along the Pearl-Surprise vein?

A. That is the only thing that I can see.

Q. Has it made a right angle turn there?

A. No.

Q. It has not? A. No.

Q. All right. As you have it drawn there, it must fault [318] the discovery vein, does it not?

A. No, I don't know whether it does or not.

Q. A great fault like this, you cannot lose readily and easily, can you?

A. Yes, great faults like this—this is not much of a fault, a 120-foot displacement don't amount to very much of a fault.

Q. In geology and mining it does, doesn't it?

A. No, and furthermore, the common way in which those faults end is to spraddle out into branches, dissipate themselves in that way, and the

(Testimony of Albert Burch.)

first point that we see is the point to which you have called my attention several times.

Q. In other words, this part of the country has fallen down 100 feet from the country all around it?

A. No, I did not say that, but I say that this section over here, relatively to the other, moved up.

Mr. GRAY.—That is all.

Redirect Examination.

(By Mr. COLBY.)

Q. Mr. Burch, it is quite a frequent occurrence, is it not, when a fault of any considerable magnitude approaches a large strong vein that it very frequently merges with it on one wall or the other, that motion is taken up along the wall of the vein?

A. In part, because you have there a pre-existing fissure. [319]

Q. That is the reason, that it reaches a plane of weakness. A. A plane of weakness; yes, sir.

Q. And the great motion is taken up along that plane of weakness? A. Yes, sir.

Mr. COLBY.—That is all.

Recross-examination.

(By Mr. GRAY.)

Q. Just one question. Did I understand you to say that you thought this was faulted again, this vein, near the southwest corner, say, faulted again over at the railroad?

A. I could see a *plain* of faults right where I hold my pencil now, which projected three or four

(Testimony of Albert Burch.)

feet, and the vein projected three or four feet would intersect on to the railroad track, and I think that fault has probably displaced that vein. I do not think this fault has any considerable throw at all.

Q. Why didn't you find it on the other side of the cut—that cuts into solid rock, doesn't it?

A. It cuts largely into solid rock.

Q. Did you look for it on the west side?

A. I did not look for it on the west side.

Q. Did you look for it on the east side?

A. Yes, sir, I found it on the east side.

Q. But you did not find it on the west side?

A. I did not find it on the west side.

Q. What you call this main fault, must, if continued in [320] its direction, fault the discovery vein, must it not? A. Yes, sir.

Q. And yet you do not find any evidences of it?

A. The only fault that I found up there is a little one there that does not displace it, but just a short distance.

Q. Well, how much? A. Oh, two or three feet.

Q. That is another fault. Did you say that in your judgment the Black Tail vein was found in the working from Station 64-C?

A. In my judgment it is; yes.

Q. What do you base that judgment upon?

A. It has the same character as the Black Tail vein, it has the quartz of considerable width ranging from 1 foot up to four or five, and it has the same gouge that accompanies the footwall of the Black Tail vein, it has the same strike and the same dip

(Testimony of Albert Burch.)

and there are very few northwest veins anywhere in the entire territory here, and it is the only thing it will match up with.

Q. Now, how far is that from the nearest exposure of what you concede to be the Black Tail vein?

A. What I think to be the Black Tail vein is about 30 feet, I guess, 25 or 30 feet on the opposite side of the fault.

Q. Just show us where that is on this level.

A. You cannot see it on that level.

The COURT.—I think he testified to that this morning.

Mr. GRAY.—I did not ask him about this, your Honor. I am talking now of what he calls this vein on the other side. [321]

A. It is about 60 feet to what I think is the Black Tail vein, on the opposite side of the fault.

Q. On the opposite of what you call the Lone Pine? A. Yes, sir.

Q. You also said you thought the same vein was found up in the Pearl tunnel at Station 92-C?

A. Yes, sir; I did.

Q. How many hundred feet away is that?

A. About 340 feet.

Q. The only reason you say that is because you have a northwest fissure with some quartz and some gouge? A. A good vein.

Q. Northwest vein?

A. A good northwest vein, and they are very rare. I do not know of but two, one is the Black

(Testimony of Albert Burch.)

Tail and the other is the Surprise, and we know that this must be the Black Tail.

Q. You expressed the opinion that the discovery vein might be shown in the Pearl tunnel and in the working at 324? A. That is possible.

Q. Do these two that you have tried to hook up there have the same strike? A. Not exactly; no.

Q. Do they have the same dip?

A. My recollection is that they have the same dip. I can look in my notes and see, but there is nothing else intervening between. I wouldn't say positively that that is it. I don't know.

Witness excused. [322]

Testimony of Arthur Lakes, Jr., for Defendant.

ARTHUR LAKES, Jr., a witness called on behalf of the defendant, after being first duly sworn, testified as follows:

Direct Examination.

(By Mr. COLBY.)

Q. Where do you reside, Mr. Lakes?

A. Spokane.

Q. What is your occupation?

A. Mining engineer.

Q. How long have you practiced this profession?

A. Thirteen years, with the exception of two years when I was in the service of the United States.

Q. What has been your experience—in the first place, where did you receive your education?

(Testimony of Arthur Lakes, Jr.)

A. I went to the Colorado School of Mines, from which I did not graduate.

Q. I believe you are the son of Professor Lakes, who was an eminent geologist? A. I am.

Q. After you left college, what was your experience?

A. I was a miner in the gold veins at Central City for about a year, surveyor and assayer in Haley, Idaho, for about a year and a half; manager of some small properties in that district for another year; engineer for the Colorado Gold Dredging Company, subsidiary of the general Development Company of New York, for about a year.

Q. Without going into detail, what mining districts have you been in and engaged in the practice of your profession? [323]

A. I have been in practically all of the western states, in Alaska and in Mexico, and have examined the mines in these states; also in British Columbia, where I was managing and consulting engineer for the Weimer Wilcox Development Company up to 1917. Since August of 1919 I have engaged in the general practice of engineering in Spokane.

Q. Are you familiar with the Republic Mining District? A. I am.

Q. Have you examined the group of mines here particularly in controversy? A. I have.

Q. And have you spent considerable time in the course of your examination? A. I have.

Q. About how much time have you spent in detailed examination?

(Testimony of Arthur Lakes, Jr.)

A. Off and on, about eleven months. The scope of my examination was to locate and note the structural features and make the exhibits presented in this case.

Q. You had a good deal to do with the preparation of these exhibits, did you not? A. I did.

Q. The actual surveying, as I understand, was largely done by someone else?

A. It was, with the exception of some few little minor points, tied into the other survey.

Q. But as far as the representations of the geological conditions are concerned, you had supervision of that portion of the work? [324]

A. I did.

Q. Now, in regard to this model here, what did you have to do with this model?

A. I made this model; that is, I directed the work on it. It is made according to the survey. The stopes depicted in red are measured as near as possible as conditions permitted. The backs of some of the stopes were approximated, as they were not available.

Q. Without going into detail, this is substantially accurate? A. Substantially accurate.

Q. Is as substantially accurate as you can get with such a small scale, is it not? A. It is.

Mr. COLBY.—We offer the model and various maps.

Mr. GRAY.—They may all be received.

(Defendant's exhibits introduced up to this point

(Testimony of Arthur Lakes, Jr.)

were thereupon admitted in evidence and made a part hereof.)

Q. Now, Mr. Lakes, I will ask you to come to the map, first, taking the surface map and pointing out to the Court what you found in the way of vein exposures in the vicinity of the discovery and extending through the discovery generally as represented on this map Exhibit 26.

A. In the vicinity of the discovery there are two at least quartz veins, the one passing through the central part being about 14 or 15 inches wide. Southwest from the discovery 10 or 15 feet there are 2 or 3 veins coming together, making a total width of quartz in excess of 5 feet. Following in this direction—

Q. When you say “this direction,” which do you mean?

A. Following the discovery towards 590, 591 and 598, a quartz stringer and vein was carried all the way. This work was done previous, in March of this year. Cross-surface trenches indicated a vein running in this direction which is exposed on the cliff. By careful examination of this part of the hillside—the part southwest from the discovery down to about 543-C where it is exposed indicated a number of quartz veins running in a northeast-southwest direction. These veins were correlated as to their strikes and afterwards the trenches depicted in the vicinity running in the vicinity of 543-C, were run. From a point about 20 feet southwest from 543-C the vein is exposed on a cliff, and

(Testimony of Arthur Lakes, Jr.)

was followed by surface trenching to the west side-line where it is in excess of 2 feet wide.

Q. Was there a continuous exposure of quartz from the discovery following down the trench that you have last indicated to the side-line?

A. There was a continuous exposure of quartz.

Q. I would like you to describe just briefly the cliff that you have mentioned there. What is that cliff composed of?

A. That cliff is composed of country rock and on [326] that cliff are a number of veins which link one with the other, and it is very abrupt. This vein can be followed down along what would probably be its dip and strike.

Q. Now, extending in the other direction from the discovery to the east side-line, what did you find?

A. From the discovery to the east side-line we find continuous quartz to a cut northwest from Station 581, where the streak of quartz that was followed is offset to the north and followed on the left-hand side of the cut down to the crosscut northeast from 581, where for a distance of about 20 feet the vein is represented as a fissure, with the quartz in small reticulating veins about the size of my finger, or smaller, but the fissure is well shown. From this point through the east side-line near pint 7-C there is a defined quartz vein.

Q. Is there any question, Mr. Lakes, about being able to follow from the discovery cut down to the east side-line the continuous quartz if you have the

(Testimony of Arthur Lakes, Jr.)

opportunity to develop it; I mean had time enough to go in there and follow out those seams?

A. I don't think so. I think we could follow continuous quartz the whole way.

Q. What can you say generally about this system of veins in here with relation to one another?

A. These veins appear, many of them, to link one with the other, and occasionally there are joining veins having a course southeast. But the general trend of all the veins in this vicinity is northeast and southwest, the linking [327] veins, the few that go in a southeast direction, do not appear to extend to any great length, but appear to start from one and branch and merge into another. One link will come up against a vein and another might be a little ways off going into another vein, but if it is followed out they usually merge in with the northeast-southwest course of the veins, the strike of the veins being predominantly northeast and southwest.

Q. I will call your attention to an exposure near 44-C marked Tunnel there. What do you find in that?

A. In tunnel 44-C is a vein of from 10 to 14 inches of quartz standing nearly vertical, in some places banded. This vein has a northeast and southwest direction.

Q. Substantially parallel?

A. Substantially parallel to one indicated at the discovery vein. I would say further that in cut 520, 551—this cut is just north, the end of it, of 551, there were these other veins across, all bearing the

(Testimony of Arthur Lakes, Jr.)

same general course and strike described.

Q. Calling your attention to 13-C, what exposure do you find there?

A. 13-C is a large—what a practical miner would call a quartz blow-out. The strike is rather hard to determine. There are some seams that appear to be going in a southeasterly direction. However, in the cut to the north of 13-C there is a good exposure of quartz, and in a cut running southwest from 13-C was shown about 4 feet of quartz, indicating that the probable course is northeast and southwest. [328]

Q. This trench which is to the north of 13-C was cut in through the wash to bed rock, was it?

A. It was.

Q. So that it would have exposed any other quartz showings along the length of that trench?

A. It should.

Q. Now, coming to the main exposure here, labeled "Lone Pine No. 2 Vein," give, in a general way, the characteristics of that vein and what your observations were as to its continuation.

A. The Lone Pine No. 2 vein as indicated by the open stopes and the croppings between them on the surface is a strong vein running northeast-southwest. It is not exposed on the surface in the immediate vicinity of the east side-line of the Lone Pine claim.

Q. Why is that?

A. Well, there is wash there, and it is exposed in a stope immediately below.

(Testimony of Arthur Lakes, Jr.)

Q. It is coming down close to the gulch there, isn't it?

A. This is in the gulch here. This wash extends to the west under the gulch.

Q. In fact, the intersection of the vein with the side-line would be practically at the creek.

A. Well—

Q. In the creek bottom, I mean.

A. Yes, in the creek bottom. The workings of it [329] if brought up there would cause the water to go into the mine. Coming southwest on the Lone Pine-Surprise vein, at about Station 544, through 543, and thence to a cut which is run from 558, the vein is exposed by a trench. This trench shows that the banding, as possibly indicated on the surface in a series of small ridges, bears a north-west course as indicated on the trench. [330]

Q. That is upon the bending direction, or more in this direction? A. Yes.

Q. In what direction is that?

A. More in a north, 25 or 30 degrees direction.

Q. East direction?

A. Northeast. At this cut there is a large exposure of quartz which appears to be cut off abruptly. South from this large exposure of quartz there is some broken up quartz material.

Q. I will ask you to *go the* model and point that out and confine your testimony as far as possible to that exposure as shown upon the model.

A. Following from the point on the model, near 664-C down to the cut No. 543-C, the vein is opened

(Testimony of Arthur Lakes, Jr.)

by a trench depicted by this red. The course of the trench is parallel with the apparent bending of the vein as indicated by the weathering, whereby there are a number of little ledges, that point more to the northeast than the course of the trench would indicate. Following from the intersection of this cut, to cut No. 558, a cut runs northerly from 558, following from the intersection of this cut with the Lone Pine No. 2 vein is some quartz that appears to belong to the Lone Pine No. 2 vein.

Q. What is the character of this quartz?

A. The character of that quartz is—it is typical of the quartz mined through the district. [331]

Q. That is the upper end of the cut?

A. Yes, sir.

Q. Then what do you reach?

A. Then there appears to be a break in the middle of the tunnel.

Q. In the tunnel?

A. In the middle of the cut by from about one-third of the distance, then the cut appears as crushed up quartz, breccia. At the southern end of the cut there appears a little vein about 14 inches wide, which extends in a southeasterly direction, and is again shown in a small cut below.

Q. What is the appearance of that small cut below?

A. The possible extension of this south vein.

Q. I mean what is the exposure in the cut below, if you recall? A. You mean vein?

Q. Yes, what does it look like?

(Testimony of Arthur Lakes, Jr.)

A. It looks like a quartz vein.

Q. What is its width?

A. Its width in the cut below is about 6 or 9 inches.

Q. And its strike and dip?

A. Strike is southeast and dip to the east.

Q. Now, coming into the No. 2 level here in this same vicinity, what do you find as you go on that level? A. On the No. 2 level?

Q. Tunnel level. Going in straight from the [332] mount of No. 2 tunnel, describe the condition that you found in this general vicinity.

A. No. 2 level from the mouth of 65-C is a cross-cut through country rock. Across this are a few gouge streaks and at a point about 20 feet in from the south is a small quartz vein with a strike apparently north, but it only shows on one side underneath the timbers and I could not get any definite course. At 64-C there is a gouge streak crossing the tunnel. Running from this gouge streak—

Q. That is indicated by blue on the model?

A. As indicated by blue on the model. In a southerly direction is some gouge which appears to merge with this through the upper part marked 65-C. A tunnel from 64-C to 326-C cuts through quartz for a considerable part of the way. In this tunnel crossing it is a gouge seam. A little cross-cut is run from 65-C in an easterly direction and near the face of a brecciated quartz with a dip to the easterly on the hanging wall of what is strong gouge. Following from Station 326 through 330,

(Testimony of Arthur Lakes, Jr.)

331, the tunnel is blank for about 30 feet, and then the gouge appears following in a southerly direction to the end southeast from Station 334. On the foot of this gauge—

Q. Southeast?

A. Southwest from Station 334. On the foot of this gouge appears quartz. This quartz is brecciated in places. [333]

Q. What quartz is that in your opinion?

A. In my opinion that quartz is the continuation of the quartz found in the cuts run by us through 576, 575, 574, and the little inclined winze to the north, 576.

Q. Has it anything to do with the No. 2 vein?

A. In my opinion it is part of the No. 2 vein, it is the southwest extension of the No. 2 vein.

Q. Now, describe the exposure in this work that you have just mentioned, the vein exposure?

A. In cut 574, the one farthest to the southwest the quartz is exposed there about 48 inches wide. In 575, it is exposed about 5 feet and then there is some country rock for about 3 or 4 feet with about 18 inches of quartz to the south, and in 576 the quartz is about 5 feet wide. In the inclined winze the quartz is partially covered by a drift. It turns on the right-hand side of the winze, however.

Q. Have you any reason to believe that it diminishes in width?

A. No, I believe on the contrary that it would maintain the same width, or approximately the same width if we could have time to expose it.

(Testimony of Arthur Lakes, Jr.)

Q. What difficulties did you have—you directed that work, as I understand it?

A. The difficulties we had in the incline drift, or the inclined winze was the wash from the gulch, and [334] the fact that it was rather hard to handle.

Q. You could not use machines there?

A. No, we had to dig.

Q. Nor couldn't blast there?

A. No, we had to dig under more or less difficulties.

Q. Had to do it all by hand? A. Yes.

Q. Now, have you a sample from any one of these cuts, that has been assayed?

A. I took a sample from about 2 feet of quartz at cut 575. This is this cut here.

Q. That is the second cut from the southwest?

A. Yes.

Q. And have you that return here with you?

A. Yes, I have.

Mr. COLBY.—We will ask that that be marked as the next exhibit in order, and we will offer it in evidence.

(The assay report admitted in evidence and marked Defendant's Exhibit No. 32.)

Q. What is the return from that in gold and silver and the total?

A. The return from that in silver is 9.7 ounces, 56/100 gold, and total value at \$1 per ounce for silver, \$21.27.

Q. And that cut is how far from the side-line,

(Testimony of Arthur Lakes, Jr.)

where the vein crosses the side-line?

A. That cut is about 25 feet. [335]

Q. Now, I see a little yellow winze here in the vicinity of 64-C. Will you describe the conditions as you found them in that vicinity? Is there a winze that is apparent to the eye now?

A. There is a little tunnel and below, running from this tunnel, is a hole filled with water.

Q. And what did you see in that stub running out above?

A. In the face of that is about one inch of quartz on the footwall dipping to the northeast, striking southeast. This quartz is about one foot in face and about four inches—

Q. Do you mean one inch?

A. One foot, and about four feet wide in the vicinity of 64-C.

Q. What is that exposure, in your opinion?

A. In my opinion it is the continuation of the Black Tail vein to the north of the Lone Pine-Surprise vein.

Q. Did it have the appearance of being quite a substantial vein? A. Yes.

Q. Did you find any other exposure further to the north that you could correlate with that?

A. In the Pearl tunnel at 92-C, there is an exposure of quartz 12 to 14 inches wide with gouge to a considerable extent.

Q. In a general way, what is the strike and dip [336] of that exposure?

A. The strike and dip of that exposure cor-

(Testimony of Arthur Lakes, Jr.)

responds generally with the strike and dip noted at 64-C. There is a little stub going out here west from point 322.

Q. What did you see in that?

A. With relation to the vein under discussion, the face of that stub is in a little gouge which apparently indicates that it is on the hanging-wall side, or on the hanging-wall of the vein exposed at 92-C.

Q. Now, continuing out in some of these workings here, the working that passes 340 there, out towards the end, to 342, just describe what you saw in there?

A. In the vicinity, or at 340, there is about 2½ feet of quartz which has a southeast course. Following it south, it narrows down considerably until opposite 341 it is a small stringer and at a point just a little north of Station 342 it appears to go out into the left wall of the tunnel. From 341 going on to the branch of the tunnel, pointing more easterly, there are scattered little bunches of quartz apparently having no continuity.

Q. And beyond that point 342, do you find a vein there?

A. No. A couple of cross-faults.

Q. Now, going down to this winze which starts near point 340, what did you find in that winze and in the forked workings, that extend out from the point [337] of this winze, through point 349, and 350.

A. I followed—in the winze on the north side ap-

(Testimony of Arthur Lakes, Jr.)

peared to be cut off—well, about 10 feet down the winze. Following up the winze, following a slip, a steep dip. At the bottom of the winze this slip continues in a northwest direction across this tunnel, this tunnel continuing northwest from Station 343, and has caved in below at the time that it was run.

Q. It opened up into the wash, did it?

Q. Yes, wash that caved up to the surface. At between 349 and 350, there appears a little quartz.

Q. About what dimension?

A. Oh, this quartz was five or six inches wide. It was very illy determined, merged into the country rock. This strikes substantially at that point there with the quartz shown in the level above at 340. Northwest from 350 this tunnel apparently again struck that mud. From that point into the face I could not testify from actually having seen it because at the time I made my last examination it was not mucked out.

Q. Who gave you the information, then?

A. Someone else gave us the information that is on there.

Q. Now, going up to the hill here, what did you find in this trench that is covered yellow and on out to where it forks and the tunnel goes underground towards the Black Tail claim?

A. The trench running along, 557, a little [338] to the northwest of 557, to and through 108?C, there is a good exposure of quartz from the northerly end up to about 108-C. Then this quartz continues on

(Testimony of Arthur Lakes, Jr.)

narrowing to less than a foot. Following this cut through to 62-C, from a point about 40 feet southeast from 108-C, both branches of the cut are in wash. A tunnel is driven from the easterly branch which follows along quartz for a short distance.

Q. And is there any quartz showing in that tunnel beyond?

A. The quartz appears to cut out a short distance in the tunnel on the right-hand side, and from the examination that I gave of this tunnel, I did not see quartz that could be classified as being of importance. A few little stringers that I did see in the immediate vicinity appeared to strike more to the northeast and southwest than to follow the course of the tunnel. These stringers were very flat and the face of the tunnel was very much broken up.

Q. Could you trace the Black Tail lode into the Black Tail ground—where did you first observe any indication of the Black Tail vein on the surface?

A. Going southerly on the Black Tail claim at Station 63-C there is an exposure of quartz. From there on to the south the quartz—this is exposed in a little cut. From there on to the south the quartz is exposed by cuts and on the surface, particularly the open stope near 38-C. And from there by cuts and surface [339] exposures of approximately 150 feet more or less.

Q. Will you describe the vein indications that you found in the vicinity of Station 231?

A. At Station 170-C there is a trench which is

(Testimony of Arthur Lakes, Jr.)

on the Black Tail vein probably. The Black Tail vein is again exposed in the crosscut tunnel, 202, 231, as a vein dipping easterly but narrowing down to less than 2 feet in width, the end of it being covered with muck. It is impossible to determine the exact width at the exact end depicted on the model in yellow. At 231-C there is a cross-vein following a north—well, a vein going almost east, and a little north of east, which stands vertically, and apparently joins the Black Tail vein under the muck.

Q. Have you made a study of the Black Tail vein so you can give us any points of distinction between that portion you have just described and your Pine No. 2?

A. I notice that along the Black Tail vein there appeared to be fairly continuous gouge along the footwall line, which is true through these workings, the Black Tail workings; again true in working at 64-C, and again evident at the exposure of the vein at 92-C. The Lone Pine No. 2 vein does not appear to be as much followed by gouge as does the Black Tail. There is gouge, of course, at places, but it does not appear to follow as uniformly. [340]

Q. How about the No. 4 vein?

A. No. 4 vein has an occasional gouge, but for the most part was rather tight within the wall.

Q. And these other parallel cross-veins?

A. They were tight and very seldom any indication of gouge. Of course they were on the surface.

Q. Those that were cut in No. 1 tunnel.

(Testimony of Arthur Lakes, Jr.)

A. Those that were cut in No. 1 tunnel were all tight veins, that is, by that word I mean that there is no parting between the vein and the country rock.

Q. That seems to be, then, a general characteristic of the northeast-southwest vein system.

A. It would appear to be.

Q. And the Surprise vein.

A. The Surprise vein which is a northwest-southeast of the northwest-southeast system is a very strong fault in the vicinity where it is followed along No. 3 level from 103-C to beyond north of 107-C; also where it is exposed on 4 near 206, and where it is again exposed in the Black Tail tunnel near Station 201.

Q. Did you notice any distinction in quartz characteristics between the Black Tail and the Pine No. 2 vein, from general observation?

A. Generally, I would say that they appeared to be very much alike, but the banding in the Lone Pine appeared to be more prominently shown than it did in the Black Tail quartz. Of course, there are occurrences where it would be very hard to tell the difference between the two quartz.

Q. That is true generally in the veins of the district, is it not? [341] A. Yes.

Q. What, in your opinion, is the relation between this exposure of vein that you have described in these cuts out here that pass through 576-5 and 4, to the No. 2 vein?

A. I believe that the vein exposed in cuts 574-5

(Testimony of Arthur Lakes, Jr.)

and 6 and the incline winze extending northeasterly, is the southwest extension of the Lone Pine No. 2 vein, as it is exposed between the Stations 326 and where it is shown at the northeast end of No. 2 tunnel.

Q. What leads you to believe that?

A. Well, the fact that the general strike of the quartz vein opened in these cuts and the ore stoped in the Lone Pine No. 2 stopes is nearly the same; that the change along what is clearly a fault plane is relatively little.

Q. What is the condition of the quartz along that fault plane?

A. The quartz along the fault plane appears to be much brecciated, which differs from the condition of the quartz generally in Lone Pine No. 2 vein, and from the quartz exposed in the surface cuts.

Q. Is that an unusual condition where a fault passes through a vein?

A. You would expect some brecciation.

Q. Can you compare the appearance of the quartz that you get near 331 to the southwest along that wall where it is shown on the right-hand side, and the quartz that you see down in this incline?

A. The quartz that you see down in this incline is white, while it has a number of black stains through it. [342]

Q. What is its general appearance to the eye before you break it up?

A. It has a dull, whitish color, the quartz of this vein here.

(Testimony of Arthur Lakes, Jr.)

Q. Is that broken at all, in that portion?

A. No, it does not appear to be broken except that we were in the wash and there were only chunks taken out.

Q. What relation to the vein did that quartz have that you find underneath there, is that the top of the vein?

A. That would be the top of the vein. If the wash was taken away it would be the surface exposure.

Q. It would be the natural outcrop?

A. Yes, sir.

Q. And the same would be true of the exposure at 331. A. Yes, sir.

Q. Now, is there anything that occurs to you, as you are more familiar with this than I am, that I have omitted in my questioning that you would like to tell the Court, that has any bearing on the case?

A. Only, except that in the underground workings in the vicinity of the discovery vein, that the strikes of the veins appear to be predominantly northeast and southwest; that in the tunnel along No. 4 vein and in the plural tunnel which crosses the western side of Lone Pine claim, there appear to be very few fissures or seams running in a southeast direction, with the exception of the vein at 92-C, and exposure of the Surprise vein at the mouth of the Pearl tunnel.

Q. There are some workings here marked in white that extend from and are a part of the Black Tail incline marked on [343] your map. Why is there no geology on this?

(Testimony of Arthur Lakes, Jr.)

A. These workings marked white are dotted on the base map, are dotted on all other maps, as they were inaccessible and under water. I would explain that part of the workings of the Black Tail workings were gotten from the official maps of the Hope people, who previously owned the Black Tail claim. I got that from the map. I never was in these.

Q. In the Black Tail workings or any of the workings that extend below it. A. No.

Q. These contour lines marked in brown, how far apart are those?

A. The contour lines marked in brown are 25 feet apart from here to here, and 50 feet apart from there on. The scale of the model is the same as the scale of the map, 40 feet to the inch.

Q. I think I overlooked one matter here on the No. 3 level. What do you find there?

A. On the No. 3 level, a little to the southwest of 81-C there is—oh, No. 3 level, on No. 3 level in the vicinity of 74-C, there appears to be a gouge slate cutting off the veins. It was followed to that point and stoped above. At the point marked “yellow” along the crosscut from No. 3 tunnel, over to the Surprise vein, there is a vein of quartz crossing in a northwest direction, dipping to the northeast.

Q. Does that correspond with any other exposure that you have?

A. It apparently corresponds in dip, or with relation to the exposure at 64-C. [344]

Q. Now, as you extend further out southwest in this working on the third level, what do you find?

A. On No. 3 level, southwest from the vicinity of

(Testimony of Arthur Lakes, Jr.)

74-C, there is a tunnel driven south and a little west along a quartz vein. At Station 336 the strike of this quartz vein is southwest.

Q. And indicated there?

A. As indicated in red on the model. At 336 there is a little tunnel driven easterly along a vein which dips northeasterly and strikes a little dip—well, southeast; that is almost due east. Beyond that is another small vein with a strike southeast and a flat dip. Beyond that is only very small and indefinite quartz stringers indicated in the tunnel.

Q. Where, in your opinion, is the No. 2 vein in relation to that tunnel?

A. The No. 2 vein with relation to that tunnel, is up about the second main cross-vein. That is, following along in a southwest direction, to the vein that runs southeast.

Q. Now, going on to No. 4 level, and in the southwesterly portion of what you have here in red, what do you find?

A. In the vicinity of 81-C the quartz apparently is cut by gouge—it is cut by gouge which extends southerly along a little tunnel that was driven. Beyond that to the southwest there appears quartz for about 25 feet on the right wall, and evidently crosses in a southwest direction.

Q. Crosses into the wall?

A. Crosses into the wall, evidently.

Q. Going now to the No. 6 level, what do you find? [345]

A. In the southwestern end of No. 6 near Station

(Testimony of Arthur Lakes, Jr.)

212, the vein appears to be cut by a fault plane, the face showing a small streak of calcite and quartz.

Q. Coming over into the Last Chance workings I notice a blue streak here on the end of the fifth level of the Last Chance mine. What does that indicate?

A. The blue streak at the northeast end of the fifth level at about Station 156-C, indicates a fault cutting across the end of the vein.

Q. Does the vein, in your estimation, pinch out and die out at that point? A. I think it is cut.

Q. Would it be found beyond, in your opinion?

A. Possibly by further exploration, one side or the other.

Cross-examination.

(By Mr. GRAY.)

Q. Now, Mr. Lakes, we have heard a lot about this fault. Upon the level, what is the apparent displacement of this Pine No. 2 vein, as you call it, by this fault, in feet? A. About 20 feet.

Q. What is the apparent displacement upon the level of what you observe and call the Black Tail vein by this fault?

A. I should judge about 35 or 40 feet.

Q. This yellow working which extends down from the bottom of the gulch was the old winze which caved, the surface winze?

A. It was not. This yellow working that extends down [346] from here, was a raise that was driven up on the vein from the level?

Q. Oh, I see. And that follows down as the Black Tail vein? A. Yes, sir.

(Testimony of Arthur Lakes, Jr.)

Q. Does that follow down in the winze from the No. 2 level? A. From the No. 2 level?

Q. Of the winze drift.

A. It apparently was cut off by the slip which this vein follows, at a distance of about 10 feet down.

Q. What do you mean by "which the winze follows"?

A. Which this winze follows. Along the dip of the Black Tail vein—or the dip of that upraise is flatter than the dip of the slip and the slip apparently has this relation to the vein, the vein coming in this direction, the slip coming down, and it got narrower as it went down.

Mr. COLBY.—Pinched off in other words?

A. Yes, sir.

Q. You painted it blue upon the east side of that winze, that slip. Is that the main fault that you have been speaking of? A. I cannot say.

Q. Well, what is your judgment?

A. I don't think it is.

Q. You have been up there 11 months.

A. I don't think it is.

Q. What fault is that? [347] A. I don't know.

Q. Another one? A. I think so.

Q. It is found at the bottom of the upraise near Station 340, isn't it?

A. Yes, crossing along the top of the tunnel near 340.

Q. On the hanging-wall of what you call the Black Tail vein?

A. Yes, cutting across the hanging-wall.

(Testimony of Arthur Lakes, Jr.)

Q. At that point, is it cutting across the hanging-wall, or is it shown as the hanging-wall, along that working?

A. At the top of the working it is shown as the hanging-wall.

Q. Where do you find that slip again?

A. This slip on this level or below?

Q. Any place.

A. We appear to find that slip at Station 349, or in that vicinity.

Q. Along this old working which was first extended out from the winze in a northerly direction?

A. Yes.

Q. Where do you find it again?

A. I cannot say as to the end of the tunnel, because it was not mucked out when I was there.

Q. It apparently shows at the end of the tunnel running from the gulch winze? A. Yes.

Q. That is at the point about 40 feet north of 350, is that correct? A. Yes. [348]

Q. Do you find it any place else on the No. 2 level?

A. No, I cannot say positively. It is gouge in the vicinity or north of Station 341; that may be the continuation of it.

Q. Now, you say that the Black Tail vein is thrown by this main fault that Mr. Burch described so beautifully, about 20 feet on the level. Show me where it is on the No. 2 level north of Station 340, after the fault passes through it.

A. After the fault passes through it?

(Testimony of Arthur Lakes, Jr.)

Q. Yes. A. At 64-C, the Black Tail vein.

Q. Where is it faulted by this fault that Mr. Burch has described?

A. It would be faulted in this vicinity.

Q. In what vicinity?

A. In the vicinity west of 334. That is where it approached the fault plane.

Q. Then you would expect to find the Black Tail vein just west of Station 334?

A. You might find—yes.

Q. You found it, as a matter of fact, in what is called the sand winze?

A. We found some quartz in the sand winze with a strike running parallel with the strike shown here.

Q. Which you recorded as the Black Tail quartz?

A. I don't say that I recorded it, but in coloring the model, we gave it that color.

Q. And in coloring the maps?

A. We gave that indication. [349]

Q. In other words, it is shown—

A. It is shown right here.

Q. Now, that would approach the fault, then, that Mr. Burch has described, and which he says runs up past Station 331, just opposite the sand winze?

A. It should.

Q. In other words, that vein has a dip to the southeast and at about the level of the No. 2 tunnel would be found just to the end of the workings at 331½, is that correct? A. It should.

Q. And there you have, in that working this fault that Mr. Burch has described? A. Yes.

Q. How far is it to where you pick it up on the

(Testimony of Arthur Lakes, Jr.)

other side of that fault? Just take the scale and measure it. A. You are asking the question—

Q. No, you just measure that.

A. It is about 100 feet.

Q. One hundred feet?

A. Along the plane of the fault.

Q. I asked you what the apparent displacement on the level was, and you said it was 20 feet. What is it when you come to measure it according to your own map? One hundred feet, isn't it?

A. Along the plane of the fault it is; yes. The displacement of the two segments of the vein, is the way I understood your question.

Q. I asked you what the apparent displacement was on the level. [350]

A. Well, I understood your question to be in another way from which you asked it.

Q. How did you understand it?

A. I understood you to ask me what the displacement of the vein in its strike would be by the fault.

Q. Well, you misunderstood me. You say it is 20 feet. How do you get that 20 feet?

A. I estimate it from the workings.

Q. Whereabouts? Just show how you can observe it and figure it out.

A. I took the strike of the vein as shown in the southwestern part of No. 2 level, and the continuation as shown by 64-C, the distance between being about—I didn't say 20 feet.

Q. One hundred feet? A. No.

Q. Measure it again.

A. It measures about 50 feet.

(Testimony of Arthur Lakes, Jr.)

Q. Fifty feet? A. Yes.

Q. Then there is a throw horizontally of 50 feet in your judgment instead of 20 feet?

A. I didn't say 20 feet.

Q. You said 35. I beg your pardon.

A. I said 35 or 40, Mr. Gray.

Q. You make it 50 now?

A. I have measured it.

Q. How did you get the vertical throw?

A. I didn't introduce that as testimony. [351]

Q. Well, is it a vertical fault? A. Yes.

Q. What is it? A. I have not measured it.

Q. How could you measure the horizontal throw if you did not measure the vertical—how do you know that it is not all horizontal displacement?

A. Well, at one place, No. 4 level, I found what appeared to be a striation, a curve in the fault, and the sloping in this gouge here appeared to have a relatively vertical direction, if I understand your question properly.

Q. In other words, you found on No. 4 level, that the fault that you picked out as the same here, has vertical striations?

A. A relative vertical striation.

Q. What was the dip of those striations and the direction?

A. Well, the dip of the striations was about 60 degrees.

Q. In what direction?

A. In a north—let's see; may I refer to my notes?

Q. Yes. So that his Honor will understand it,

(Testimony of Arthur Lakes, Jr.)

the striation is in the fault plane to show the movement of the fault?

A. Yes. I did not measure the dip of the striation.

Q. You have it indicated by its dipping in a southeasterly direction, slightly east of south.

A. That one striation; yes.

Q. You have one, haven't you, at 56°?

A. No, that is the dip of that plane. [352]

Q. But the direction of the striations are slightly east of south?

A. Slightly east of south at that place.

Q. What is the strike of the fault at that place?

A. North 8 degrees east.

Q. And its dip? A. The dip is 56 degrees.

Q. To the south?

A. Well, it would be easterly.

Q. Now, that is the main fault that Mr. Burch has been talking about and which you have referred to? A. That is the main fault.

Q. And there it has a strike of pretty nearly—

A. Pretty nearly north and south.

Q. Pretty nearly north and south? A. Yes.

Q. What is its strike on the No. 6 level?

A. It is approximately parallel; pretty near north and south.

Q. And dips— A. About 57 at that point.

Q. Which is approximately the same as in the other. A. Yes.

Q. On the No. 3?

(Testimony of Arthur Lakes, Jr.)

A. North 18 degrees east, with a dip of about 40, flattened locally.

Q. Mr. Lakes, was it your opinion that the portion of the vein which is marked red on the No. 4 level on the two sides of that fault were parts of the same vein? [353] A. I don't know.

Q. I asked you as to your opinion.

A. It is a question that cannot be answered.

Q. What vein is it, then, that you show on the westerly side of that fault?

A. It could be the continuation.

Q. I asked you if you had an opinion of what it was. A. I cannot say that I know.

Q. Why did you mark it in red?

A. Because it has all a northeast-southwest direction, which the veins are marked red in this direction.

Q. You do not pretend to say that it is part of this so-called system? A. I have not said so.

Q. I suppose, as a matter of fact, you spend more time than Mr. Burch or any of these other gentlemen on that property? A. Yes.

Q. Come back up here to this level, in No. 3. Do you mean to say to his Honor that this red vein is cut off in that drift, west of 336, by what you recognized as a northwest and southeast vein?

A. I don't say that it is cut off.

Q. Why did you paint it that way?

A. Because I did not see it going beyond. I tried to detect the geology as we found it throughout.

Q. At 336, can you find a vein coming from the

(Testimony of Arthur Lakes, Jr.)

south, and actually crossing through a vein which runs in an easterly and westerly direction? [354]

A. At Station 336?

Q. Yes, sir; right here.

A. You can see a vein coming from a southeasterly direction, coming up to the vein going in a northeasterly direction, with a little crack in it that appears that it might either—

Q. It might either join or cross? A. Yes.

Q. So that the painting on it would be a little misleading in that respect. It shows here that it crosses.

A. No, it would not be entirely misleading. We want to show the dips of the vein.

Q. Let us come down to this working at 331. That is the working which goes southerly from Station 331 which we have referred to as 331½.

A. 331½; yes.

Q. Do you find a gouge running along there as you have depicted it upon this model?

A. Not as plainly, because the east half of the tunnel is in wash.

Q. Do you find that gouge in the face of that little working as it is to-day?

A. You find quartz in the right and wash immediately behind it in the left.

Q. I suppose by exclusion you mean to say you do not find the gouge?

A. Without the gouge appearing in the surface rock—

A. I asked you if you found it.

(Testimony of Arthur Lakes, Jr.)

A. I did not.

Q. And yet you have painted it. Do you find in the westerly face of that working to-day, quartz?

A. Yes. [355]

Q. Is that course followed continuously back to Station 331?

A. This part of the quartz in the center of the tunnel is followed back to Station 331. That on the side is picked up in this crosscut.

Q. Where did you find it in the working? Now, assume that we are looking south on the right-hand side of the drift at the face where is the quartz?

A. The quartz is on the right-hand side of the drift about a level with my hand, about three or four feet.

Q. Isn't it, as a matter of fact up in the roof?

A. There is some there.

Q. As you entered that drift, where was the quartz?

A. The quartz was on the right-hand side near the floor.

Q. Near the floor. Could you get the direction and the course of it? A. Yes.

Q. What was it, what was the strike?

A. The strike of the quartz in the vicinity of 331 was almost due south.

Q. What was it at the face?

A. It was hard to get the strike, but the strike that I took was south 10 degrees west.

Q. As a matter of fact, that working is running diagonally across those bands of quartz, isn't it?

(Testimony of Arthur Lakes, Jr.)

A. That working was—if the working had followed the quartz band exactly, it would have come directly to the right. [356]

Q. At the beginning you have those quartz bands dipping in what direction?

A. They dip easterly.

Q. When you started in that working they were at the floor and at the face, they have gradually raised up until you find them in the roof; isn't that true? A. Well, when I started the working—

Q. Just answer the question.

The COURT.—Answer the question directly.

A. They were not there in the floor.

Q. Didn't you tell me they were near the floor?

A. They were near the floor.

Q. They were near the floor. At the face they are near the roof?

A. About on a level of where I held my hand.

Q. Didn't you tell me there was some of it in the roof? A. Some of it in the roof; yes, sir.

Q. Is there any near the floor at the face?

A. No, it is wash.

Q. On the right-hand side?

A. There is some in the right-hand side near the floor, some quartz.

Q. Some quartz. A minute ago you said—

A. I said I represented it on this model about where I got it.

Q. I asked you if, as a matter of fact, as you look as you walk along that working when you enter it you don't find the quartz in the working near the

(Testimony of Arthur Lakes, Jr.)

floor and that when you get to the face the quartz that you find is at [357] higher elevations as you go forward to the face; that is true, is it?

A. Departing, yes.

Q. Now, then, come over to this map, the detail sketch—

The COURT.—We will take a recess of 5 or 10 minutes.

(Thereupon a recess was taken.)

Mr. GRAY.—I want to ask you a question or two about one or two of those surface workings. Did I understand you to say that in the cut G-1 there was only from 6 to 9 inches of quartz?

A. I saw 6 to 9 inches of quartz.

Q. Isn't it a fact that there is at least 2 feet of solid quartz disclosed and open to observation in that cut at this time? A. I saw 9 inches.

Q. When were you there, Mr. Lakes?

A. Two weeks ago.

The COURT.—That is the cut in close proximity to the gulch, is it not? A. Yes, sir.

Mr. GRAY.—Yes, sir; the lower third of it, I think, is in the wash, isn't it? A. Yes, sir.

Q. Now, you show quartz in what you call the Pine vein on the east side of this fault in the working in the trench north of 558?

A. Yes, sir. [358]

Q. Take and measure off for me 20 feet along that fault.

A. Approximately under C in the word "cut."

Q. Where is the quartz in what would be the

(Testimony of Arthur Lakes, Jr.)

faulted segment of the Pine vein on the west side of that fault—why didn't you show it if it is there?

A. I did not find it.

Q. You found it just a few feet below there on that side of the fault, didn't you? A. Yes.

Q. But you did not find it out here in this surface trench? A. I did not.

Q. Where is the quartz of what you choose to call the Lone Pine vein on the west side of what you choose to call a fault which displaces it in the trench north of 558? A. There is no quartz there.

Q. Where is the other end of that vein?

A. Up here.

Q. I said of what you call the Lone Pine vein.

A. I call this the Lone Pine vein.

Q. What do you call the Black Tail vein? I beg your pardon.

A. Oh, it is not exposed on the surface.

Q. It is not exposed in that trench on the west side of the fault? [359]

A. The quartz on the west side is not exposed in the trench.

Q. Well, why not?

A. Well, it was covered with debris. Work has not been done to uncover it.

Q. Didn't you follow up that fault far enough to find the other end of it, if there was another end on the west side? A. I did not.

Q. How far would the trench have to go?

A. I don't know.

Q. Do you know how far the displacement is on

(Testimony of Arthur Lakes, Jr.)

the level; now how far would it be?

A. I don't know.

Q. You cannot tell? A. No.

Q. Can you tell how far you would have to follow down that trench to find what you call the Lone Pine vein on the west side of that point?

A. Not exactly; no.

Q. Well, don't you know what the displacement is on the level along the *plain* of that fault?

A. Yes, sir.

Q. What is it? A. About 100 feet.

Q. About 100 feet? A. Yes, sir.

Q. Measure down 100 feet, then, and let us see about where that will bring you. [360]

A. About the center of the gulch.

Q. About the center of the gulch. And in the direction of the fault. A. Yes, sir.

Q. Let us see if we can locate the center of the gulch—can you locate the center of the gulch with reference to corner No. 1 of the Pine claim?

A. How near do you wish it?

Q. Approximately. A. About here.

Q. Just put a mark there some place where you put the pencil mark, put an L on Exhibit 28. Now, Mr. Lakes, on that same level you have quartz on the west side of that fault. How do you account for it in the working along at 331 and 331½; if it had been displaced 100 feet at that point how do you account for the fact that you show it there on the west side of the fault?

A. It is there, the quartz is there.

(Testimony of Arthur Lakes, Jr.)

Q. Then it was displaced 100 feet there, was it, by that fault?

A. I did not get that question, Mr. Gray.

Q. Was the Pine vein, so-called, displaced 100 feet by this fault we have been referring to in the vicinity of Stations 336 to 331 and down the working 331½? A. I haven't measured it. [361]

Q. Could there be a displacement of 100 feet at the surface and not a similar displacement on this level, speaking now of the No. 2 level?

A. I don't think so.

Q. Now, there isn't any actual displacement on No. 2 level, is there, on the two sides of this fault, of what you call the Pine vein?

A. By displacement, you mean throw of the fault along the Pine vein fault?

Q. No, along a horizontal plane. Now, you said on a horizontal plane that it was 100 feet displacement, apparent displacement on the level?

A. What vein?

Q. The Pine vein. A. I said 25 feet, about.

Q. 25 feet, about, on a horizontal plane?

A. Yes.

Q. Now, that is not along the plane of the fault, but the apparent displacement of the vein?

A. Yes.

Q. Do you find a 25-foot displacement on the two sides of that fault, of what you term the Lone Pine vein?

A. I match up the two ends of the Lone Pine vein. That gives me a throw of about—

(Testimony of Arthur Lakes, Jr.)

Q. Whereabouts on the two sides of the fault?

A. What?

Q. On the sides of the fault?

A. This is the upper side of the fault and that is the lower. [362]

Q. Why, Mr. Lakes, look at your map.

A. Yes.

Q. The ore which you show in red at Station 326— A. Above the fault?

Q. Above the fault. —and that which you show just west of Station 330 and in 331 is below the fault. A. Following the fault?

Q. Yes, sir. A. Yes, sir.

Q. Where is the throw of 25 feet there? You have continuous quartz, haven't you?

A. Have continuous quartz.

Q. Now, then, on the surface, coming back again to this trench, why don't you show the same quartz 25 feet down or approximately continuously on the west side of that fault?

A. The quartz that follows the fault I did not see on the surface.

Q. As a matter of fact, I did not see from your map, there is not an interruption of the quartz on No. 2 level, is there?

A. Quartz breccia, quartz partially dragged in the fault.

Q. Do you want his Honor to understand that the quartz that is shown from 331 to 331½ and along there, is drag quartz? A. Partially.